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UK METEOROLOGICAL OFFICE GLOBAL DATA MONITORING REPORT

SEPTEMBER, 94

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1. Introduction

As the WMO-appointed lead centre for monitoring surface marine data, the U.K. Meteorological Office produces monthly statistics on the quality of these observations received at RSMC Bracknell. This report includes this information along with statistics for most other types of data. The figures and tables contained herein are presented according to the agreed standards for the exchange of monitoring results.

The report is based on data received at the UK Meteorological Office Headquarters, Bracknell in time for inclusion into the appropriate analysis. The evaluation of data quality is based on comparison with the appropriate 6-hour global model forecast (background field). Generally, the background field is of high quality except in data sparse areas, tropical regions and areas close to steep orography where care should be taken in interpreting the statistics shown.

Comments or queries on the report are welcome and should be addressed to:-

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2 Global Data Monitoring Statistics

Ships, Fixed buoys, Platforms and Drifting buoys observations

TABLES 1-2 contain lists of the stations which are considered to have returned suspect observations of pressure, windspeed, wind direction or temperature, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 1 and 2 show 10 degree lat/long box average numbers of SHIP/SYNOP and DRIBU observations received per day throughout the month at Bracknell and assimilated into model runs. Only data from the main hours of 00 UTC, 06 UTC, 12 UTC and 18 UTC are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Synop Observations

Table 3 contains a list of stations which are considered to have returned suspect observations of Pressure during the month. The criteria for quality control are given in the header page. The reporting practice of each station is included in the list of statistics.

At RSMC Bracknell, for synoptic stations at or below a height of 500 metres, reported mean sea-level pressure is used in the statistics. If this is unavailable the mean sea-level pressure is calculated from the reported station-level pressure and temperature.

For synoptic stations above 500 metres, the mean sea-level pressure is calculated from the reported station-level pressure and temperature, or, if these are not available the height of a standard pressure-level (e.g.: 850 hPa or 700 hPa). If neither of these are available, the reported mean sea-level pressure is used.

Some stations vary their reporting practice according to the observation hour (e.g.: some stations in the CIS report both mean sea-level and station-level pressure at 00 & 12 UTC, but only mean sea-level pressure at 06 & 18 UTC). For monitoring purposes, reported mean sea-level pressure is stored separately from that calculated from station-level pressure or height of a standard pressure-level. Only statistics for the preferred method (see above) are presented in this report, and so for certain high-level stations, such as those from the CIS, approximately half of the number of observations actually received will appear in the statistics.

Aircraft observations

TABLE 4 contains a list of statistics calculated from data received from all airline carriers.

Figure 3 shows 10 degree lat/long box average numbers of AIREP/ASDAR reports received per day throughout the month at Bracknell and assimilated into model runs in the layer 70-500 hPa. Observations with a vector wind difference (compared with the model background field) of >60 ms^{-1} have been excluded. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Figures 4-7 show wind statistics for AIREP/ASDAR in the layer 70-500 hPa. Observations with a vector wind difference > 60 $m\ s^{-1}$ have been excluded. Statistics have not been calculated for 10 degree lat/long boxes containing <31 observations.

Figure	Parameter
4	Mean wind vectors
5	Mean observation - background wind vector
6	Mean observation-background speed ($m\ s^{-1}$)
7	RMS observation-background vector ($m\ s^{-1}$)

Radiosonde Observations

TABLES 5-7 contain lists of the stations which are considered to have returned suspect observations of geopotential height, vector wind or wind direction, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 8 and 9 show 10 degree lat/long box average numbers of TEMP 500 hPa GEOPOTENTIAL HEIGHT and TEMP/PILOT 300 hPa WIND observations received per day throughout the month at Bracknell and assimilated into model runs. Data from all hours are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

APPENDIX I shows details of the gross error limits used in TABLES 5 and 6 and the weights used in the RMS values in TABLE 5.

Satellite Observations

Figures 10-24 show satellite wind statistics for all geostationary satellites. All plots other than **AVAILABILITY** show average data where there are > 10 observations in a 10 degree lat/long box.

Figure	Parameter Plotted	Layer (hPa)
10	Availability/average daily number	701-1000
11	Vector mean wind (observed)	701-1000
12	Observation-background vector wind difference	701-1000
13	Mean observation-background speed differences	701-1000
14	RMS observation-background vector difference	701-1000
15	Availability/average daily number	401-700
16	Vector mean wind (observed)	401-700
17	Observation-background vector wind difference	401-700
18	Mean observation-background speed differences	401-700
19	RMS observation-background vector difference	401-700
20	Availability/average daily number	101-400
21	Vector mean wind (observed)	101-400
22	Observation-background vector wind difference	101-400
23	Mean observation-background speed differences	101-400
24	RMS observation-background vector difference	101-400

Figures 25-27 show satellite mean observation-background temperature differences for NOAA-11 soundings at 500 km resolution and figures 28-30 show the same statistics for NOAA-12. Data are plotted where there are > 30 observations in a 10 degree lat/long box.

Figure	Layer (hPa)
25/28	850-1000
26/29	100-300
27/30	30-50

3 Composite Observing Systems for the North Atlantic (COSNA)

This section shows statistics for upper air (radiosonde and aircraft) and surface (drifter) data for the North Atlantic area for data received at Bracknell during the month.

TABLE 8 shows quality statistics for **Mean Sea-level Pressure, Windspeed and Wind Direction** received at Bracknell in DRIFTER code during the month for the area 10°N - 80°N, 85°W - 0°W.

TABLE 9 shows quality statistics for **Temperature and Vector Wind** received at Bracknell from aircraft during the month for the area 40°N - 70°N, 60°W - 0°W.

Table 10 - 13 show quality statistics **(Geopotential Height and Windspeed at 100 and 500 hPa)** for all TEMPSHIPS in the area bounded by 0°N - 90°N, 100°W - 40°E and selected TEMP stations within the same area.

TABLE 1

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SHIPS, FIXED BUOYS AND PLATFORMS
MONITORING CENTRE: BRACKNELL
MONTH:September, 94

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for ships, fixed buoys and platforms.

Standard of comparison :Background field from Bracknell global model.

Observation times :00, 06, 12, 18 UTC

Elements monitored
:Mean sea level pressure (hPa).
:Wind speed (m s^{-1}).
:Wind direction (Degrees).

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors. **N.B. a positive bias indicates the observation is veered to the background.**

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT
:15 hPa (pressure)
:25 m s^{-1} (vector wind)

SELECTION CRITERIA :NOBS $\geq$ 20 , and one or more of the following:

1. |bias| $\geq$ 4 hPa (pressure),
$\geq$ 5 m s^{-1} (wind speed),
$\geq$ 30 degrees (direction).

2. SD $\geq$ 6 hPa (pressure),
$\geq$ 80 degrees (direction).

3. PGE $\geq$ 25

IDENTIFIER	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE									
CZ9742	ALL	MSLP	SUR	49	49	100	0.0	0.0	0.0
C6FA6	ALL	MSLP	SUR	38	2	5	1.5	-6.1	6.2
C6JG8	ALL	MSLP	SUR	36	0	0	2.0	5.2	5.6
C6KB6	ALL	MSLP	SUR	37	0	0	0.9	-5.4	5.5
DVRF	ALL	MSLP	SUR	50	0	0	0.8	4.8	4.9
ELEW9	ALL	MSLP	SUR	21	0	0	1.0	-6.5	6.6
ELOY5	ALL	MSLP	SUR	30	1	3	2.5	5.1	5.7
ELPP9	ALL	MSLP	SUR	36	1	3	5.7	-4.5	7.3
ESCA	ALL	MSLP	SUR	23	1	4	0.9	12.0	12.0
GYXG	ALL	MSLP	SUR	25	0	0	3.5	-5.3	6.4
HZXR	ALL	MSLP	SUR	29	0	0	1.1	-5.1	5.2
KXDB	ALL	MSLP	SUR	45	14	31	1.1	-9.5	9.5
NQST	ALL	MSLP	SUR	21	0	0	1.1	-4.3	4.5
PCGQ	ALL	MSLP	SUR	33	3	9	6.3	4.5	7.8
PESF	ALL	MSLP	SUR	47	0	0	0.9	-9.0	9.1
P3NG5	ALL	MSLP	SUR	27	0	0	1.2	10.9	11.0
UFOJ	ALL	MSLP	SUR	25	2	8	2.0	-4.0	4.5
UKNM	ALL	MSLP	SUR	22	2	9	5.0	-4.6	6.8
UNWJ	ALL	MSLP	SUR	34	0	0	1.5	4.7	5.0
UYVB	ALL	MSLP	SUR	30	0	0	2.0	-4.7	5.2
VC6749	ALL	MSLP	SUR	58	1	2	2.6	-5.3	5.9
VPHW	ALL	MSLP	SUR	29	0	0	1.6	-6.4	6.6
VRUA4	ALL	MSLP	SUR	29	0	0	1.1	5.1	5.3
WCB5820	ALL	MSLP	SUR	41	0	0	2.7	7.2	7.6
WZE4928	ALL	MSLP	SUR	26	25	96	0.0	11.6	11.6
ZBWP	ALL	MSLP	SUR	28	0	0	0.9	4.3	4.4
63102	ALL	MSLP	SUR	28	0	0	1.8	5.9	6.2
WIND SPEED									
C6DY8	ALL	SPEED	SUR	27	0	0	4.1	6.7	7.9
C6JD4	ALL	SPEED	SUR	38	0	0	8.4	10.0	13.0
ELMF9	ALL	SPEED	SUR	24	0	0	3.4	5.2	6.2
FNIH	ALL	SPEED	SUR	157	0	0	6.1	8.9	10.8
FNUD	ALL	SPEED	SUR	31	1	3	7.9	7.5	10.9
FNVA	ALL	SPEED	SUR	50	0	0	3.5	5.4	6.4
HPEW	ALL	SPEED	SUR	29	0	0	5.4	10.7	12.0
LXDI	ALL	SPEED	SUR	57	0	0	6.3	5.6	8.4
OWUO6	ALL	SPEED	SUR	23	0	0	2.0	5.4	5.8
OXRA6	ALL	SPEED	SUR	21	0	0	3.3	6.6	7.3
SXYY	ALL	SPEED	SUR	33	0	0	5.0	9.6	10.9
XYKM	ALL	SPEED	SUR	20	0	0	4.2	6.7	7.9
ZCAI	ALL	SPEED	SUR	28	0	0	4.4	7.0	8.3
3EVY8	ALL	SPEED	SUR	27	0	0	5.7	7.2	9.2
4PLC	ALL	SPEED	SUR	22	0	0	1.7	5.1	5.3
WIND DIRECTION									
BHFR	ALL	DIRN.	SUR	27	0	0	37.6	-34.9	51.3
CG3130	ALL	DIRN.	SUR	37	0	0	36.2	-32.3	48.5
GYXG	ALL	DIRN.	SUR	23	0	0	42.9	114.9	122.6
SCIP	ALL	DIRN.	SUR	25	0	0	91.7	-0.2	91.7
UFBE	ALL	DIRN.	SUR	21	0	0	116.0	65.2	133.0
21004	ALL	DIRN.	SUR	46	0	0	17.9	36.8	40.9
45136	ALL	DIRN.	SUR	35	0	0	106.3	-16.4	107.6
46029	ALL	DIRN.	SUR	64	0	0	27.9	39.2	48.1
46045	ALL	DIRN.	SUR	32	0	0	53.9	-74.1	91.6
46053	ALL	DIRN.	SUR	69	0	0	45.1	-56.0	71.9
46054	ALL	DIRN.	SUR	98	0	0	26.5	-31.9	41.5
46131	ALL	DIRN.	SUR	38	0	0	35.8	-46.3	58.6
46146	ALL	DIRN.	SUR	47	0	0	42.7	-67.5	79.8
46183	ALL	DIRN.	SUR	75	0	0	39.8	-31.8	50.9

```
IDENTIFIER    HOUR    ELEM    LEVEL    NOBS    NGE    PGE    SD        BIAS     RMS

WIND DIRECTION
.
51301         ALL     DIRN.   SUR        42      0      0   42.9      46.6     63.3
51306         ALL     DIRN.   SUR        23      0      0  123.0     -69.4    141.3
62027         ALL     DIRN.   SUR        67      0      0   87.0      -6.0     87.3
```

AVAILABILITY - SHIP/SYNOP - SEPTEMBER 1994

MAIN HOURS ONLY

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 19277

FIGURE 1

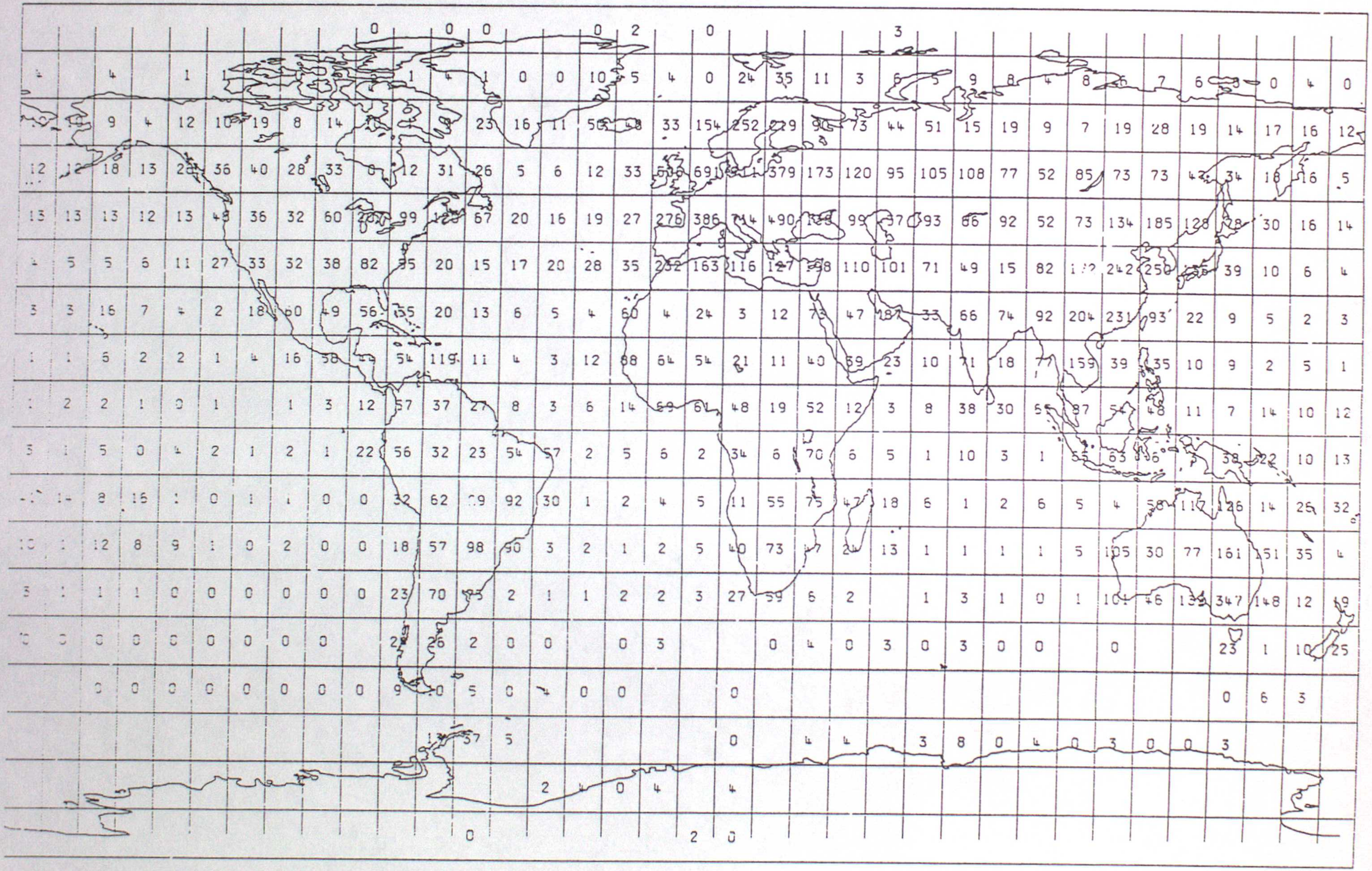


TABLE 2

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - DRIFTING BUOYS
MONITORING CENTRE: BRACKNELL
MONTH:September, 94

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for drifting buoys.

Standard of comparison :Background field from Bracknell global model.

Position :Average latitude and longitude for period.

Observation times :00, 06, 12, 18 UTC

Elements monitored :Mean sea level pressure (hPa).
:Wind speed ($m\ s^{-1}$).
:Wind direction (degrees).

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors.
N.B. a positive bias indicates the observation is veered to the background.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT :15 hPa (pressure)
:25 $m\ s^{-1}$ (vector wind)

SELECTION CRITERIA :NOBS ≥ 20 , and one or more of the following:

1.|bias| $\geq$ 4 hPa (pressure),
$\geq$ 5 $m\ s^{-1}$ (wind speed),
$\geq$ 30 degrees (direction).

2.SD $\geq$ 6 hPa (pressure),
$\geq$ 80 degrees (direction).

3.PGE $\geq$ 25.

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE											
21534	42.9	143.2	ALL	MSLP	SUR	143	0	0	1.5	-9.6	9.7
44766	64.1	-56.9	ALL	MSLP	SUR	1337	480	36	1.1	-0.2	1.1
WIND SPEED											
62508	45.4	-17.8	ALL	SPEED	SUR	44	0	0	2.1	7.5	7.8
62509	47.4	-17.9	ALL	SPEED	SUR	53	0	0	2.5	6.6	7.1
WIND DIRECTION											
64544	64.0	-31.9	ALL	DIRN.	SUR	326	0	0	88.1	6.5	88.3

AVAILABILITY - DRIBU - SEPTEMBER 1994

MAIN HOURS ONLY

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 3219

FIGURE 2

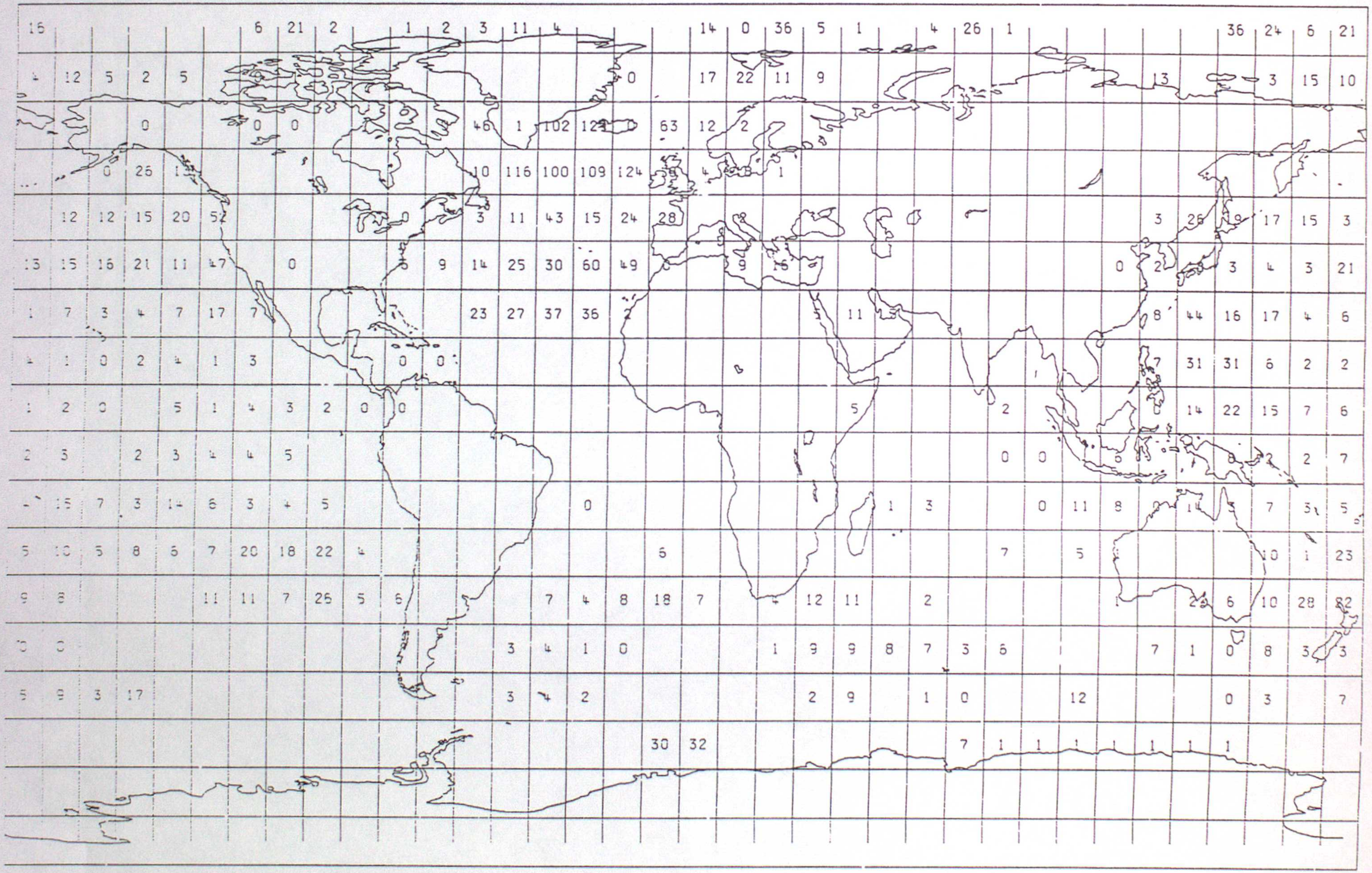

16 6 21 2 1 2 3 11 4 14 0 36 5 1 4 26 1 36 24 6 21
4 12 5 2 5 0 17 22 11 9 13 3 15 10
0 0 0 46 1 102 124 63 12 2
0 25 13 10 116 100 109 124 4 1
12 12 15 20 52 0 3 11 43 15 24 28 3 26 9 17 15 3
13 15 16 21 11 47 0 5 9 14 25 30 60 49 9 16 0 2 3 4 3 21
1 7 3 4 7 17 7 23 27 37 36 2 11 8 44 16 17 4 6
4 1 0 2 4 1 3 0 0 7 31 31 6 2 2
1 2 0 5 1 4 3 2 0 0 5 2 14 22 15 7 6
2 5 2 3 4 4 5 0 0 2 7
15 7 3 14 6 3 4 5 0 1 3 0 11 8 14 7 3 5
5 10 5 8 6 7 20 18 22 4 6 7 5 10 1 23
9 8 11 11 7 25 5 6 7 4 8 18 7 4 12 11 2 1 29 6 10 28 82
0 0 3 4 1 0 1 9 9 8 7 3 6 7 1 0 8 3 3
5 9 3 17 3 4 2 2 9 1 0 12 0 3 7
30 32 7 1 1 1 1 1 1 1

TABLE 3

MONITORING OF LAND SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SYNOPS & AUTOSYNOPS
MONITORING CENTRE: BRACKNELL
MONTH:September, 94

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for synops & autosynops.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:00, 06, 12, 18 UTC
Elements monitored		:Mean sea level pressure (hPa).
Parameters monitored	:HT(m)	:Station height (in metres) as given in WMO No. 9 Vol A
	:RP	:Pressure reporting practice M=mean sea level pressure (hPa) reported. S=Station level pressure reported. 8=Geopotential height (m) of 850 hPa surface reported. 7=Geopotential height (m) of 700 hPa surface reported.
	:NOBS	:Number of observations received excluding duplicates.
	:NGE	:Number of observations with gross errors.
	:PGE	:Percentage of observations with gross errors.
	:%REJ	:Percentage of observations flaggled.
	:SD	:SD of difference of observations from background values excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.
GROSS ERROR LIMIT	:15 hPa	(pressure)
SELECTION CRITERIA	:NOBS	≥ 20 ,and one or more of the following:
	1.|bias|	≥ 4 hPa
	2. SD	≥ 6 hPa
	3.PGE	≥ 25.

Note:- **For stn ht ≥ 500m, mslp is that calculated from station level pressure where available.**
For stn ht < 500m, mslp is that as reported by the station where available.

WMO REGION 1

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
60445	36.2N	5.4E	1081	S8	116	0	0	91	1.0	4.7	4.8
60468	35.6N	6.2E	1052	S8	115	115	100	18	0.0	0.0	0.0
60511	35.3N	1.4E	1127	S8	108	107	99	99	0.0	-1.4	1.4
60571	31.6N	2.2W	773	S8	115	1	1	18	1.3	-4.1	4.3
60670	24.6N	9.5E	1054	S8	114	0	0	100	1.0	8.6	8.7
63333	11.1N	39.7E	1916	MS	66	1	2	91	0.8	6.6	6.6
63402	7.7N	36.8E	1577	MS	86	52	60	99	0.8	-14.0	14.0
63453	8.8N	39.8E	1062	S	61	3	5	95	1.6	12.0	12.1
63474	7.1N	40.0E	2450	S	55	55	100	0	0.0	0.0	0.0
63478	5.1N	44.6E	320	MS	49	0	0	24	1.3	6.6	6.7
63801	4.9S	29.6E	885	M	29	1	3	86	1.7	7.6	7.8
64503	3.4S	10.7E	34	M	29	0	0	100	1.5	-9.3	9.4
64507	2.9S	11.0E	79	M	65	0	0	95	1.9	-7.1	7.3
64911	5.0N	9.9E	821	8	66	1	2	48	2.0	-5.4	5.8
68014	19.6S	18.1E	1411	S8	84	0	0	51	1.1	-5.4	5.5
68752	32.8S	27.4E	524	S8	104	0	0	100	1.3	-8.9	9.0

WMO REGION 2:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
25902	60.8N	151.8E	797	MS	43	4	9	98	1.0	-13.2	13.2
29999	52.5N	99.8E	1570	S8	44	41	93	91	12.7	-3.3	13.1
30554	54.5N	113.6E	995	MS	60	0	0	100	1.1	11.2	11.3
38611	41.0N	71.6E	465	MS	117	0	0	2	2.0	4.0	4.5
38613	40.9N	72.9E	771	MS	49	6	12	4	2.0	4.8	5.2
38615	40.5N	72.8E	887	MS	57	2	4	0	2.2	4.7	5.2
38696	39.6N	66.9E	675	MS	57	0	0	82	1.1	-4.5	4.6
38713	39.9N	69.0E	1043	S8	114	4	4	1	3.3	4.3	5.4
38836	38.6N	68.8E	824	MS	56	7	13	9	2.1	4.8	5.2
38933	37.8N	68.8E	430	MS	89	0	0	9	2.0	4.0	4.5
38944	37.5N	69.4E	446	M	34	0	0	9	2.7	4.0	4.8
40356	31.7N	38.7E	818	S8	117	0	0	67	1.0	-4.4	4.5
40376	27.6N	38.6E	860	MS	70	70	100	0	0.0	0.0	0.0
40432	25.8N	42.0E	783	MS	67	67	100	0	0.0	0.0	0.0
40701	39.3N	44.4E	1470	MS	105	2	2	84	1.8	6.3	6.6
40723	37.5N	57.3E	1074	MS	100	3	3	6	1.2	-4.0	4.2
40726	36.8N	45.7E	1385	MS	94	1	1	90	1.2	5.6	5.7
40743	36.2N	57.7E	941	MS	103	1	1	20	1.2	-4.8	4.9
40762	35.3N	59.2E	1333	MS	102	23	23	99	1.8	-13.3	13.4
40763	35.2N	58.5E	1060	MS	52	2	4	33	1.8	-5.8	6.1
40783	32.4N	49.7E	1972	MS	51	0	0	80	1.3	-5.7	5.8
40789	33.8N	55.1E	921	MS	82	2	2	93	2.8	7.6	8.1
40836	30.8N	51.7E	1880	MS	94	0	0	73	1.0	6.3	6.4
40859	29.0N	53.7E	1383	MS	93	1	1	100	1.0	8.8	8.9
41254	23.1N	57.7E	1755	S8	78	78	100	95	0.0	0.0	0.0
41396	16.0N	48.9E	700	MS	20	0	0	45	1.4	5.5	5.7
44277	46.4N	96.3E	2147	MS	99	3	3	0	1.4	-5.3	5.5
44292	47.9N	107.0E	1338	MS	92	0	0	0	1.7	5.3	5.6
44416	28.6N	81.6E	720	MS	63	0	0	0	1.5	6.1	6.3
44477	27.0N	87.4E	1445	S8	49	47	96	100	10.2	2.4	10.5
51467	42.7N	86.3E	1753	S	119	0	0	0	2.1	6.7	7.0
52602	38.8N	93.4E	2734	S	119	0	0	0	1.6	-6.6	6.8
52866	36.7N	101.8E	2296	S	118	0	0	55	1.2	5.9	6.0
56144	31.7N	98.6E	3204	S	91	1	1	5	2.2	-4.1	4.7
56287	30.0N	103.0E	629	M	119	0	0	78	1.5	6.4	6.6
56444	28.5N	98.9E	3488	S	117	117	100	100	0.0	0.0	0.0
56462	29.0N	101.5E	2994	S	112	0	0	0	2.0	5.6	5.9
57622	28.9N	107.2E	1907	S	103	0	0	0	1.3	-11.1	11.2
57816	26.5N	106.7E	1222	MS	118	114	97	100	0.6	14.1	14.1

WMO REGION 3:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
80315	3.0N	75.3W	443	MS	64	0	0	13	2.0	-4.2	4.7
82326	3.8S	62.1W	49	MS	66	0	0	9	1.9	4.5	4.9
83235	12.3S	46.4W	660	MS	46	1	2	80	0.7	6.0	6.0
83295	13.4S	39.9W	755	MS	28	0	0	86	0.8	-4.4	4.5
83332	14.1S	46.4W	950	MS	78	17	22	100	0.9	13.9	13.9
83423	16.7S	49.3W	729	MS	84	0	0	27	0.9	-5.0	5.1
83488	17.8S	42.9W	1097	MS	63	63	100	97	0.0	0.0	0.0
83512	18.5S	54.8W	286	MS	74	0	0	51	2.6	-5.2	5.8
83531	18.6S	46.5W	896	MS	71	2	3	77	1.0	-7.5	7.6
83586	19.5S	44.3W	732	MS	81	1	1	6	1.0	-4.4	4.5
83587	19.8S	43.9W	850	MS	85	0	0	0	1.1	-8.6	8.7
83623	20.4S	50.0W	503	MS	78	0	0	36	2.2	-4.8	5.3
83704	22.3S	53.9W	369	MS	68	6	9	87	3.5	-8.0	8.7
84248	3.3S	80.0W	10	M	29	1	3	7	2.0	4.7	5.1
84377	3.8S	73.3W	126	M	117	1	1	0	2.2	4.0	4.6
84401	5.2S	80.6W	50	MS	118	1	1	0	1.6	4.6	4.9
84425	5.9S	76.1W	184	MS	78	1	1	0	2.5	5.9	6.4
84455	6.5S	76.4W	282	MS	82	0	0	21	2.5	7.0	7.4
84472	7.1S	78.5W	2622	S	62	2	3	81	2.0	-7.5	7.8
84501	8.1S	79.0W	30	MS	105	0	0	0	1.5	4.1	4.4
84531	9.2S	78.5W	21	MS	51	0	0	0	1.3	5.6	5.7
84658	12.6S	69.2W	266	MS	86	0	0	0	2.3	6.6	7.0
84686	13.6S	72.0W	3249	S	120	0	0	29	2.0	-7.1	7.4
84782	18.1S	70.3W	469	MS	115	1	1	0	1.8	4.6	4.9
85223	17.4S	66.1W	2548	S7	113	0	0	25	2.4	-4.0	4.7
85406	18.3S	70.3W	58	M	111	0	0	0	1.5	5.0	5.2
87046	24.4S	65.1W	905	S8	106	105	99	0	0.0	-1.4	1.4
87322	31.3S	66.6W	658	MS	76	76	100	0	0.0	0.0	0.0

WMO REGION 4:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
76118	30.4N	109.7W	1040	MS	49	2	4	96	0.9	-10.1	10.1
76373	25.3N	105.8W	1967	MS	79	71	90	97	0.3	14.5	14.5
76539	22.1N	101.0W	1871	MS	105	1	1	88	1.0	-5.2	5.3
76632	20.1N	98.7W	2417	MS	67	1	1	99	0.8	-7.9	7.9
76692	19.1N	96.1W	13	MS	89	0	0	2	1.1	4.2	4.3
76726	18.9N	99.3W	1560	MS	92	1	1	98	1.8	-8.4	8.6
76762	17.5N	99.5W	1360	MS	80	0	0	100	1.3	10.9	11.0
76848	16.3N	92.1W	1530	MS	112	29	26	100	0.8	-13.7	13.7

WMO REGION 5:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
94001	6.1S	141.3E	-9999	M	93	0	0	0	1.1	4.4	4.5

WMO REGION 6:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
01245	62.6N	9.7E	630	MS	82	2	2	94	1.2	-4.9	5.0
08221	40.5N	3.6W	633	MS	95	0	0	93	1.0	6.0	6.1
11241	47.2N	15.5E	1438	S8	83	32	39	45	2.8	-2.7	3.9
11346	47.3N	12.8E	917	S	87	0	0	71	1.6	-4.7	5.0
15052	47.4N	25.6E	1541	S8	117	2	2	0	0.9	-5.4	5.5
16020	46.5N	11.3E	1461	MS	80	80	100	0	0.0	0.0	0.0
16614	40.4N	21.3E	604	MS	111	0	0	100	1.3	-7.7	7.8
17084	40.6N	35.0E	837	MS	106	0	0	100	1.2	6.7	6.8
17260	37.1N	37.4E	855	MS	105	102	97	99	0.1	14.7	14.7
34357	49.6N	42.8E	129	MS	117	0	0	50	4.4	4.3	6.2
37228	43.1N	44.6E	670	MS	57	1	2	81	1.3	-4.0	4.2
40184	31.8N	35.2E	809	S8	119	1	1	98	1.3	6.2	6.3

ANTARCTIC:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
89009	90.0S	0.0	2800	S	45	3	7	16	4.9	-4.2	6.5
89324	80.0S	120.0W	1530	S8	99	6	6	16	3.7	-4.5	5.8
89667	78.0S	166.5E	20	MS	98	0	0	5	4.0	5.6	6.9
89757	73.8S	55.7E	2775	S7	58	58	100	95	0.0	0.0	0.0
89762	68.7S	60.6E	1850	M	21	17	81	33	4.7	-3.1	5.6
89803	68.5S	102.2E	2118	S7	77	4	5	40	3.2	-9.1	9.6
89811	66.7S	112.9E	1362	S8	84	22	26	76	3.3	-10.0	10.5
89828	74.5S	123.0E	3280	S7	99	4	4	22	4.2	5.0	6.5
89832	66.7S	139.8E	240	MS	56	56	100	100	0.0	0.0	0.0
89834	67.4S	138.7E	1560	S8	86	0	0	9	4.3	-4.0	5.9
89860	74.2S	160.3E	1772	S8	93	4	4	31	3.6	-7.7	8.5
89866	77.4S	163.8E	120	MS	67	0	0	22	3.7	6.9	7.8

TABLE 4

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:September, 94

Monitoring procedures

Period :One calendar month.

Data monitored :Statistics for each airline carrier.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from Bracknell global model.

Observation times :All hours combined.

Level(s) monitored :70.0 - 500.0 hPa

Elements monitored :TEMP in °C ; WIND in m s^{-1}

Parameters monitored

:N REP. :Number of observations received excluding duplicates.

:PG :Percentage of observations with gross errors.

:PR :Percentage of observations rejected by quality control including rejections from the duplicate check.

:PC :Percentage of observations with calm winds.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.

:BIAS :Mean difference of observations from background values excluding those with gross errors in Temperature & Wind Speed.

GROSS ERROR LIMITS :10.0 °C ; 60 m s^{-1} Vector Wind

SELECTION CRITERIA :N REP ≥ 20

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AAA	92	2	8	3.0	-1.0	91	0	2	0	9.7	1.3
AAL	4266	1	2	1.7	0.1	4264	0	2	0	7.7	1.6
AAN	157	2	6	1.7	-0.3	141	0	5	0	8.5	0.0
AAR	1515	1	1	1.7	-0.1	1507	0	2	0	8.6	1.6
ACA	1156	0	2	2.1	0.0	1184	0	1	0	7.3	0.9
ACI	59	2	2	1.7	1.1	59	0	0	0	6.5	0.6
AEA	183	1	3	1.6	0.3	181	0	3	0	9.3	0.1
AEL	319	4	7	2.3	0.1	317	0	6	0	8.6	0.7
AFL	128	8	100	4.5	2.8	127	0	100	3	14.3	1.3
AFR	1054	1	5	1.9	-0.1	1057	0	5	1	7.4	1.1
AIC	55	0	0	2.5	0.7	57	0	0	0	8.9	0.2
AJJ	58	2	2	2.5	-0.4	56	0	4	0	13.1	2.8
AMT	380	0	1	1.6	0.5	384	0	2	0	7.6	1.7
AMX	323	3	100	2.6	-0.2	325	0	3	0	8.7	1.0
ANA	839	0	1	1.7	-0.1	839	0	2	1	8.2	1.6
ANO	24	0	0	1.8	1.2	24	0	0	0	7.7	4.6
ANZ	3024	1	2	1.9	0.0	3010	0	2	1	8.2	1.7
AOM	599	1	2	1.5	0.4	601	0	2	0	7.8	0.8
ARG	36	8	8	1.6	-0.2	34	0	6	0	12.9	0.1
ARP	104	0	5	2.2	1.1	102	0	6	4	8.7	1.2
ASY	53	6	15	2.9	1.0	53	0	8	0	9.7	1.7
ATN	198	1	5	2.8	-2.0	202	0	100	0	14.0	1.7
AUA	53	0	0	1.9	-1.2	53	0	2	0	7.2	0.6
AVA	355	1	2	1.7	-0.4	357	0	4	1	9.0	1.2
AVN	32	0	0	2.3	0.8	32	0	0	0	6.4	1.7
AZA	391	1	3	1.7	0.2	393	0	2	0	8.1	0.9
BAL	302	0	14	1.5	-0.3	306	0	15	0	8.3	0.9
BAW	1595	0	4	1.9	-0.2	1613	0	4	0	7.8	1.4
BBB	85	0	15	1.3	-0.5	86	0	17	0	7.6	0.5
BWA	357	2	1	1.7	0.9	358	0	1	0	7.7	1.8
CAL	1912	0	1	1.7	-0.2	1907	0	2	1	8.4	1.3
CCA	281	1	4	2.5	0.4	284	0	6	0	10.9	1.4
CDN	2217	0	2	2.1	0.3	2218	0	3	1	8.2	1.5
CES	274	0	0	1.8	0.5	274	0	1	0	8.2	1.0
CFC	48	2	13	2.8	0.9	49	0	8	0	7.8	0.5
CFG	725	0	1	1.6	-0.8	725	0	3	0	8.1	0.5
CKS	127	2	7	2.6	0.4	132	0	99	0	11.7	3.7
CKT	58	2	5	1.6	0.1	59	0	2	0	6.5	0.9
CLI	244	0	1	2.1	-0.1	244	0	1	1	6.5	0.7
CLX	95	0	1	2.3	-0.8	99	0	0	0	8.4	0.7
CMI	1234	1	3	2.1	0.7	1243	0	6	3	8.7	2.3
CMM	297	1	2	2.0	-0.3	297	0	2	0	8.3	1.7
COA	934	0	2	1.5	0.3	937	0	3	1	7.0	1.7
CPA	77	0	1	1.3	-0.2	75	0	4	0	7.9	2.1
CRL	259	0	1	1.4	-0.1	268	0	1	0	7.3	1.4
CTM	69	1	22	2.8	-1.2	69	0	19	0	6.8	2.1
CUB	188	1	10	2.4	0.7	188	1	9	0	10.0	1.3
DAE	23	0	4	2.1	0.0	23	0	0	0	6.6	0.5
DAL	5313	0	2	2.0	0.5	5148	0	2	0	7.8	1.3
DHL	223	2	100	3.9	-2.3	222	0	100	0	10.0	1.3
DLH	2330	0	4	1.9	-0.3	2359	0	7	3	7.2	1.0
DOA	196	1	13	1.6	-0.4	195	0	14	0	8.3	0.5
EIA	44	2	5	2.0	0.0	46	0	43	0	10.6	2.9
ELY	100	0	9	1.9	-0.6	104	0	11	0	8.2	2.2
EVA	1230	1	2	1.9	-0.4	1229	0	3	0	8.6	1.3
EWW	27	0	0	4.0	1.7	27	0	11	0	12.9	2.0
FDX	909	1	2	2.0	0.6	908	0	2	0	8.1	1.2
FIN	488	0	2	2.1	0.2	491	0	4	2	8.7	1.1
FJI	492	2	2	1.8	0.7	490	0	4	0	10.6	0.8

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
FKJ	21	0	5	3.0	-0.8	21	0	0	0	9.7	0.7
FKO	20	0	20	5.5	-4.8	20	0	0	0	14.9	1.7
GAF	112	0	1	1.8	-0.1	111	0	1	1	7.3	1.6
GFA	28	4	4	2.1	0.2	34	0	3	0	7.7	1.5
GIA	248	2	2	1.6	0.2	251	0	0	0	7.3	0.9
HAL	1078	0	0	1.4	0.3	1081	0	2	1	7.2	1.5
HLF	141	1	1	1.5	-0.7	139	0	0	0	7.6	0.6
IBE	2205	0	12	1.6	-0.2	2185	0	12	0	7.6	1.0
ICE	414	1	2	1.8	-0.2	412	0	2	0	7.5	1.5
JAA	67	1	3	1.8	0.9	65	0	0	0	6.7	1.9
JAL	6224	0	1	1.8	0.2	6226	0	2	1	8.4	1.7
KAL	3146	1	2	2.0	0.0	3139	0	2	0	8.7	1.4
KIW	28	4	11	3.9	2.7	28	4	4	0	8.3	2.4
KLM	1865	0	1	1.8	0.3	1862	0	2	0	7.8	1.3
LDA	249	1	11	2.0	-0.9	249	0	11	0	8.0	0.3
LDI	192	2	2	1.6	-0.9	191	0	3	1	8.4	0.6
LIB	165	1	1	1.5	0.2	164	0	5	2	7.3	0.6
LOT	472	0	2	2.3	0.3	476	0	2	0	7.9	0.3
LTU	652	0	3	1.7	0.2	632	0	3	1	7.5	1.0
LWD	241	2	2	1.5	0.5	254	0	1	0	6.5	1.4
MAS	404	1	2	1.8	-0.4	405	0	4	1	10.2	1.2
MDA	144	1	1	2.0	0.7	146	0	1	1	8.4	1.8
MKD	73	0	4	2.4	-0.1	76	0	9	0	11.9	-1.0
MKU	21	0	0	1.1	-0.4	21	0	0	0	7.9	0.7
MOD	27	0	22	2.4	-0.4	29	0	17	0	14.0	1.7
MPH	603	0	1	1.6	-0.3	599	0	1	0	7.4	1.4
MRS	29	10	76	7.5	-6.6	29	0	24	0	15.2	6.4
NCA	720	0	2	2.1	0.2	717	0	3	1	9.2	1.3
NGA	136	1	1	1.9	0.8	135	0	100	0	11.3	0.0
NWA	10318	1	2	2.1	0.6	10335	0	4	2	8.3	1.4
OAL	21	0	0	2.1	1.3	21	0	5	0	8.5	4.8
PAC	21	5	19	2.2	0.3	21	0	14	0	11.1	1.1
PAL	1020	0	1	1.6	-0.3	1028	0	91	2	8.6	1.6
PAO	115	3	5	1.7	0.0	111	1	5	0	11.1	1.8
PIA	30	0	0	1.7	0.7	31	0	6	0	13.3	-1.2
PNL	129	1	2	2.7	0.6	130	1	1	0	8.5	0.7
QFA	2047	1	2	1.9	0.3	2031	0	2	1	8.0	1.4
RAF	228	0	0	1.8	0.1	224	0	0	0	8.4	2.7
RIA	20	0	5	2.6	1.1	20	5	5	0	11.9	-1.2
RJA	35	6	6	1.8	0.7	36	0	6	0	9.1	0.7
RKA	45	0	4	2.1	0.4	45	0	0	0	6.0	0.6
RON	74	3	4	2.1	0.1	71	0	1	0	6.9	0.1
ROY	51	2	4	2.6	1.2	51	0	4	0	8.5	1.3
RRR	270	2	22	2.2	-0.4	267	0	100	1	8.6	2.0
SAA	259	1	1	1.9	-0.8	252	0	1	0	8.3	1.4
SAB	34	0	0	1.8	0.1	35	0	0	0	6.4	1.3
SAS	1342	0	1	2.0	-0.3	1349	0	2	1	8.3	0.9
SIA	1256	1	2	1.9	-0.5	1254	0	2	0	8.8	1.5
SJM	32	0	3	2.1	1.8	32	0	3	0	7.6	2.0
SOL	32	0	3	1.6	0.3	32	0	9	6	9.6	1.6
SPP	360	1	2	1.6	-0.2	352	0	2	0	7.9	1.0
SVA	200	1	5	2.0	0.2	209	0	5	0	8.8	0.8
SWR	130	0	1	1.7	0.0	134	1	2	0	8.6	1.5
TAP	805	1	3	1.8	0.0	806	0	3	0	8.2	0.9
TEJ	26	4	12	1.6	-0.6	26	0	15	0	10.7	0.1
THA	327	1	2	1.9	-0.4	325	0	2	0	9.4	1.1
TIH	127	2	4	1.6	-0.1	129	0	3	1	8.1	1.3
TOW	94	1	2	2.1	0.1	95	0	72	0	8.9	0.6
TSC	219	0	1	2.0	-0.4	222	0	5	0	8.8	0.8

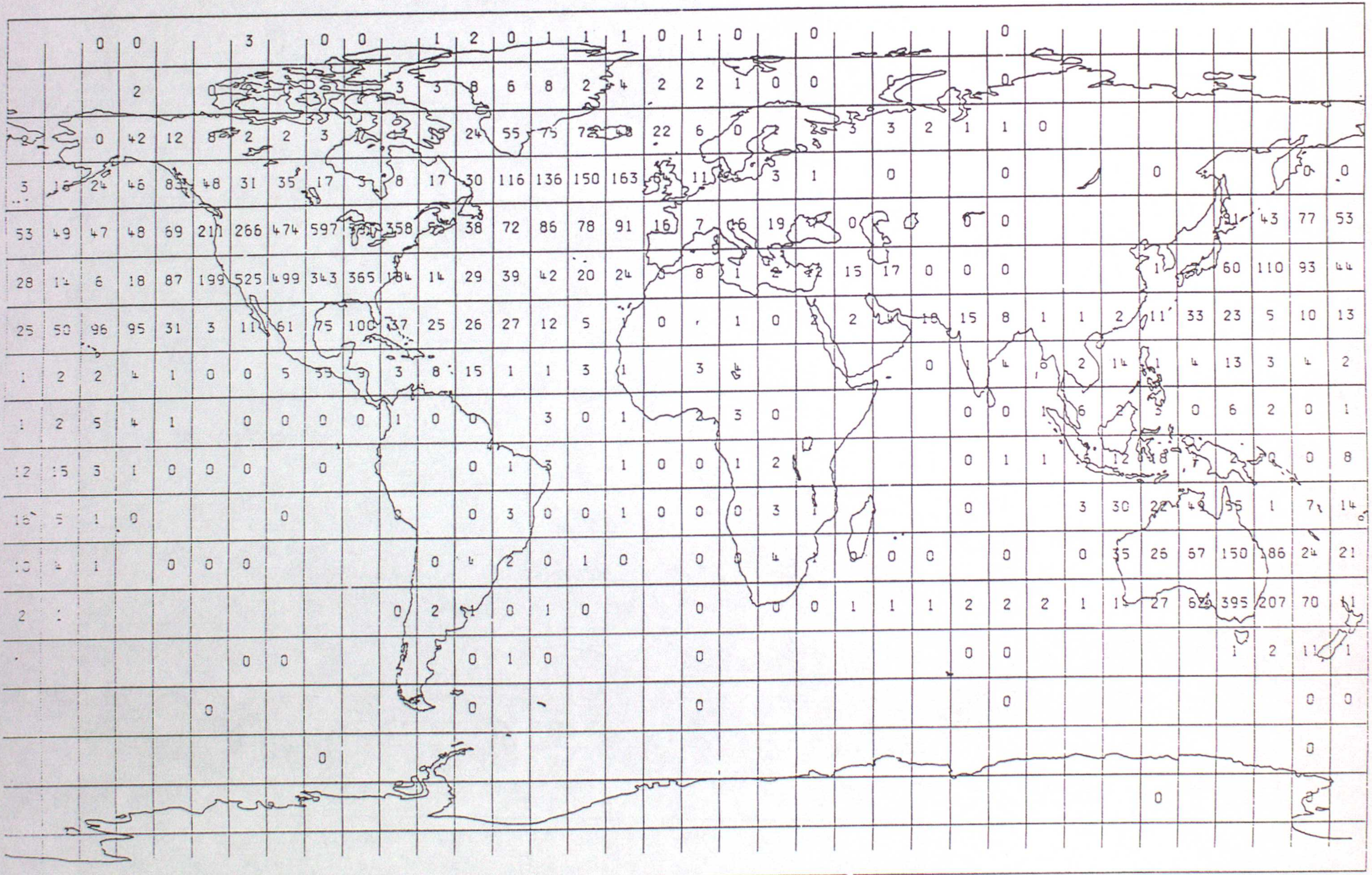
	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
TWA	1401	1	2	2.0	0.2	1393	0	3	0	7.8	1.5
UAL	78936	1	3	1.3	0.1	78985	0	4	1	6.5	0.7
ULE	79	0	5	1.5	-0.1	82	0	5	0	8.1	0.8
UPS	622	1	9	1.8	-0.3	635	0	9	0	8.5	1.5
USA	74	0	4	2.0	-0.3	75	0	3	0	6.6	0.5
VIA	629	0	3	1.5	0.3	627	0	4	1	7.3	1.6
VIR	123	1	2	2.0	-0.1	130	0	2	0	6.8	1.7
VRG	71	1	3	2.1	0.5	71	0	1	0	9.3	2.6
VSP	120	1	1	1.9	0.5	120	0	2	0	8.3	1.2
WOA	36	0	6	2.5	0.0	37	0	3	0	8.5	3.3
XXX	64	0	8	1.3	-0.1	63	0	8	0	6.5	1.9
AN	25992	0	1	1.7	0.1	25769	0	1	0	6.9	1.3
BA	19206	0	8	1.5	0.5	19163	0	8	0	7.1	1.5
DL	795	1	100	2.8	0.5	795	10	100	0	36.4	1.9
KL	850	0	1	1.3	0.3	850	0	4	1	8.3	0.7
NW	50181	0	1	1.4	0.1	50181	0	1	0	6.0	0.8
QF	9297	0	1	1.3	0.1	9286	0	1	0	6.4	1.3
M	302	3	11	3.2	1.3	313	0	8	0	11.7	2.3
N	559	1	4	2.4	0.3	572	0	3	0	8.7	1.7

MEAN DAILY COUNT OF AIRCRAFT 70 - 500 HPA

SEPTEMBER 1994

OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED

FIGURE 3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53 49 47 48 69 211 266 474 597 731 358 5 38 72 86 78 91 16 7 16 19 0 0 0 31 43 77 53
28 14 6 18 87 199 525 499 343 365 184 14 29 39 42 20 24 3 8 1 2 42 15 17 0 0 0 1 60 110 93 44
25 50 96 95 31 3 11 61 75 100 37 25 26 27 12 5 1 0 1 0 2 2 14 18 15 8 1 1 2 11 33 23 5 10 13
1 2 2 4 1 0 0 5 33 9 3 8 15 1 1 3 1 3 4 0 1 4 0 2 14 1 4 13 3 4 2
1 2 5 4 1 0 0 0 0 1 0 0 3 0 1 2 3 0 0 0 1 6 2 5 0 6 2 0 1
12 15 3 1 0 0 0 0 0 1 3 1 0 0 1 2 0 1 1 5 12 18 7 2 0 0 8
16 5 1 0 0 0 3 0 0 1 0 0 0 3 1 0 3 30 22 49 55 1 7 14
10 4 1 0 0 0 0 4 2 0 1 0 0 0 4 1 0 0 0 0 0 35 26 57 150 186 24 21
2 1 0 2 1 0 1 0 0 0 0 1 1 1 2 2 2 1 1 27 62 395 207 70 11
0 0 0 1 0 0 0 0 1 2 11 1
0 0 0 0 0 0
0 0
0

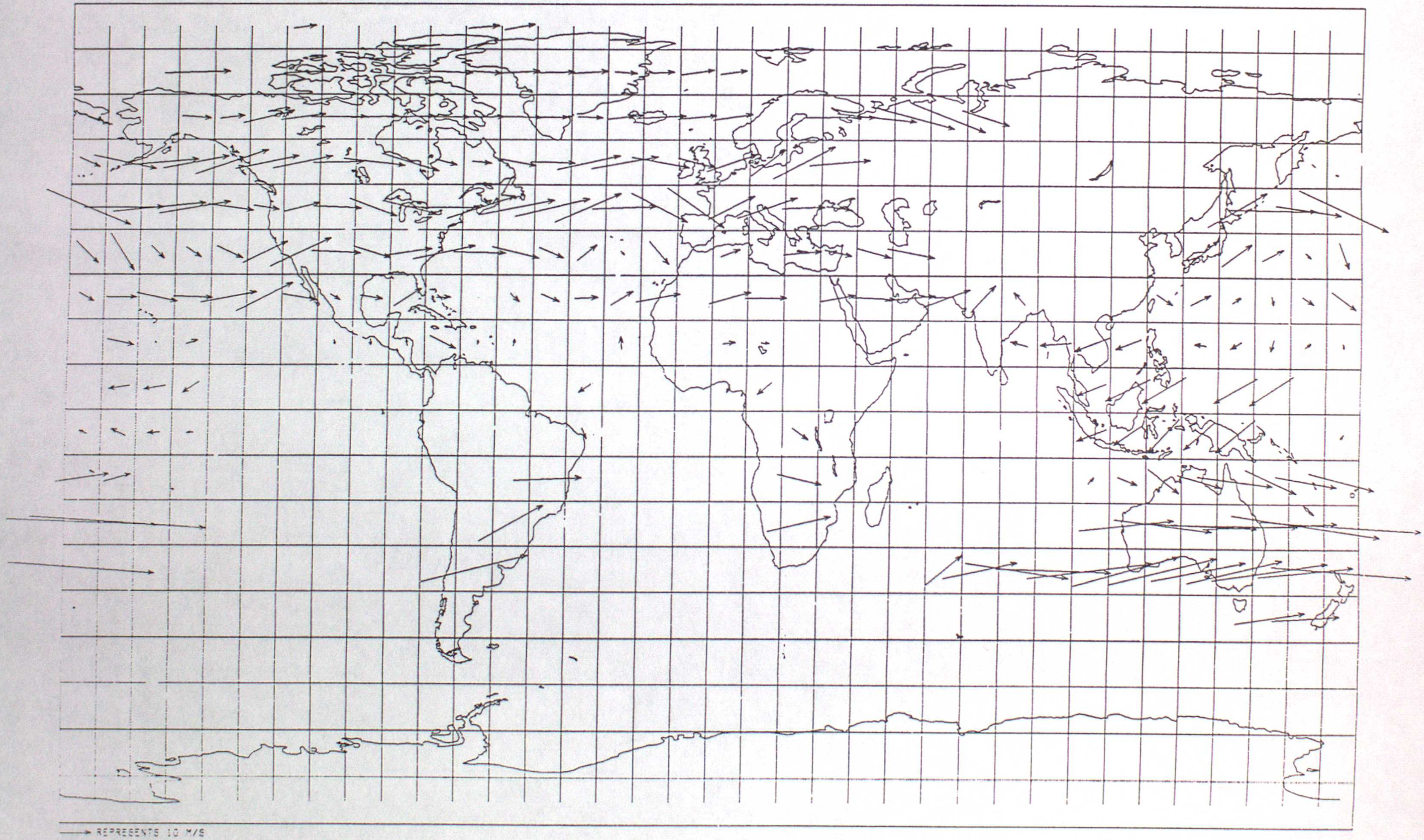
AIRCRAFT MEAN WINDS BETWEEN 70 AND 500 HPA

FIGURE 4

SEPTEMBER 1994

OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED

VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

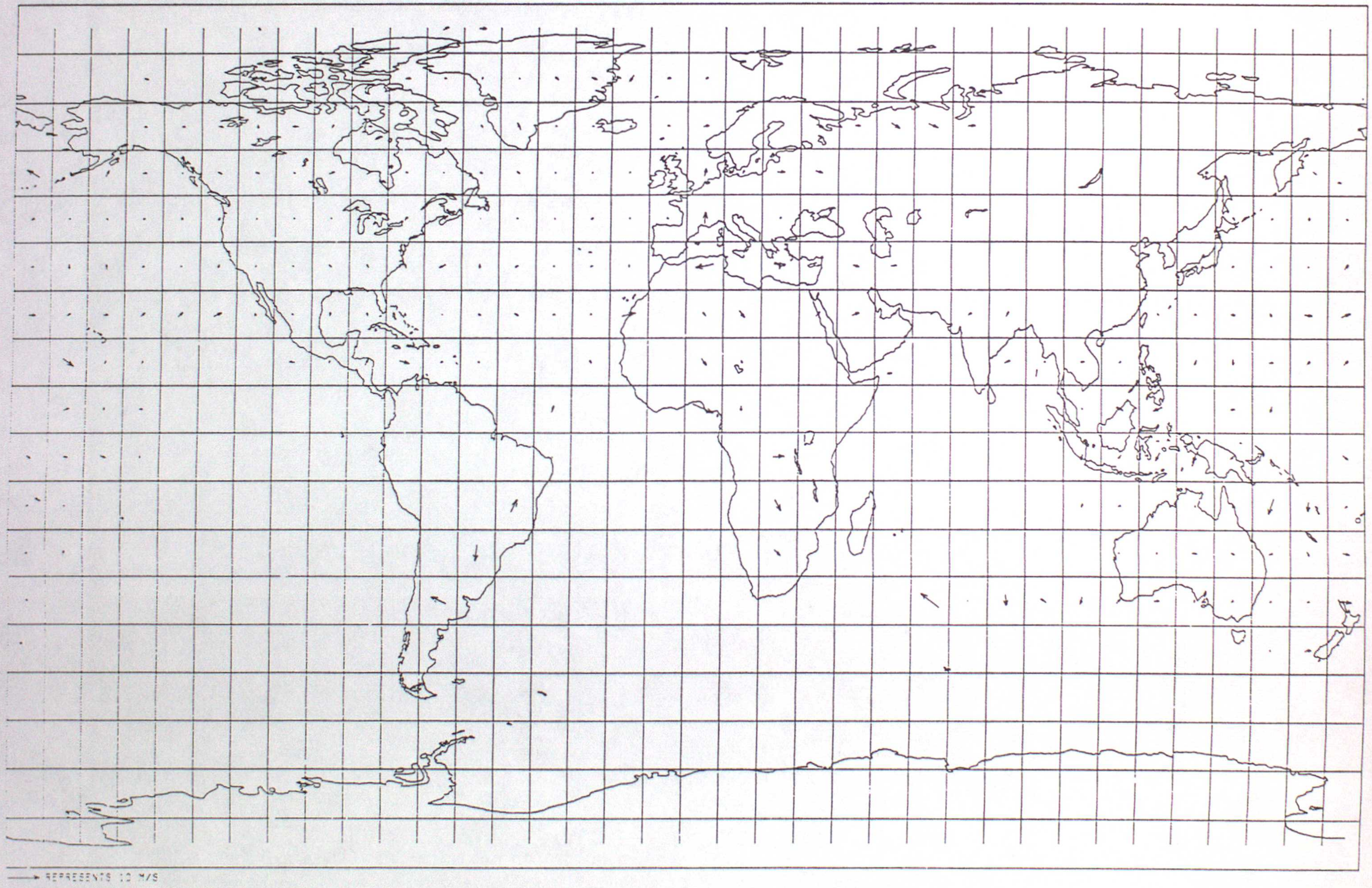


AIRCRAFT MEAN O-B WINDS BETWEEN 70 AND 500 HPA FIGURE 5

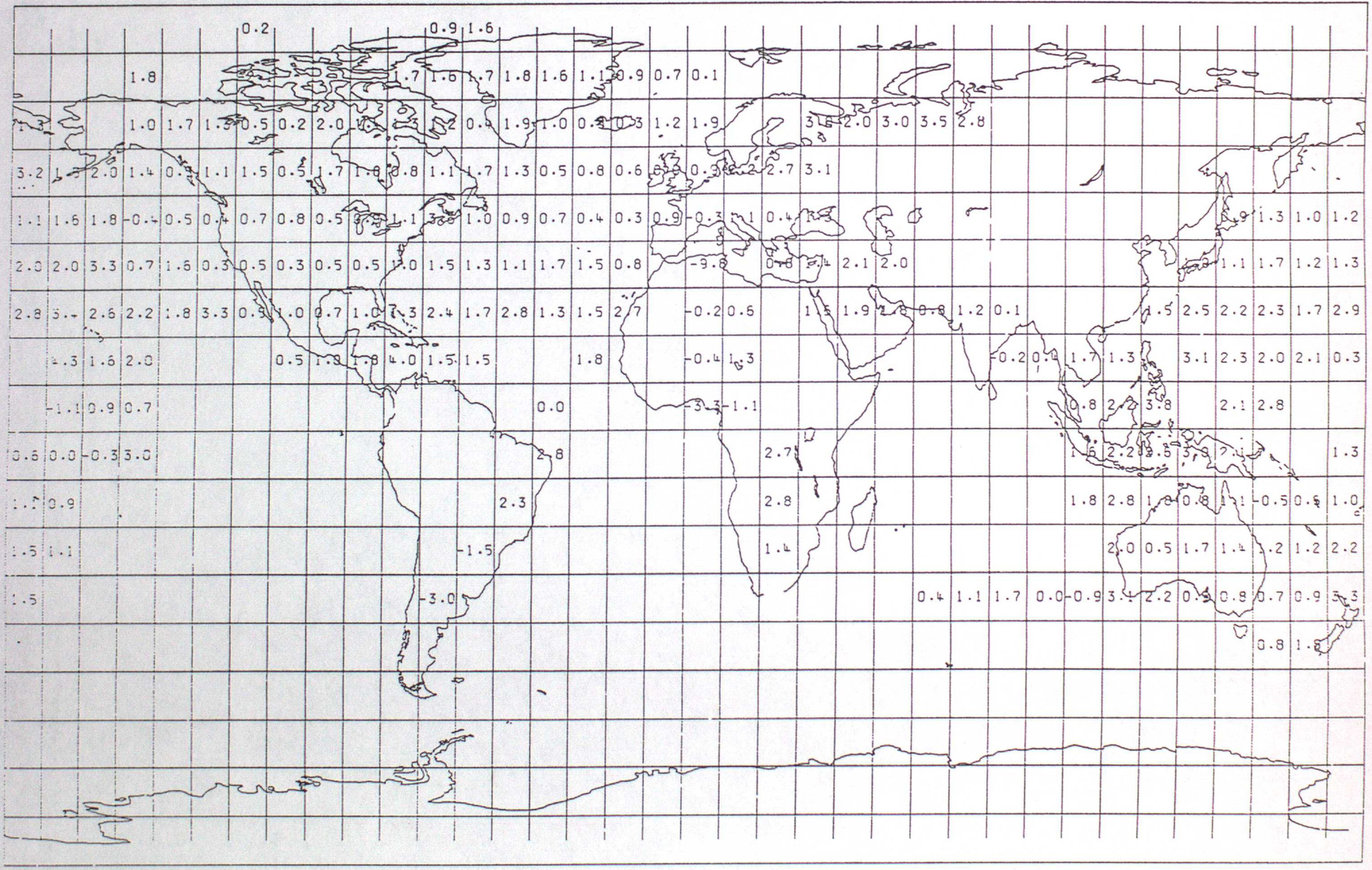
SEPTEMBER 1994

OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED

VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT



AIRCRAFT : MEAN O-B SPEEDS (M/S) BETWEEN 70 AND 500 HPA FIGURE 6
SEPTEMBER 1994
OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT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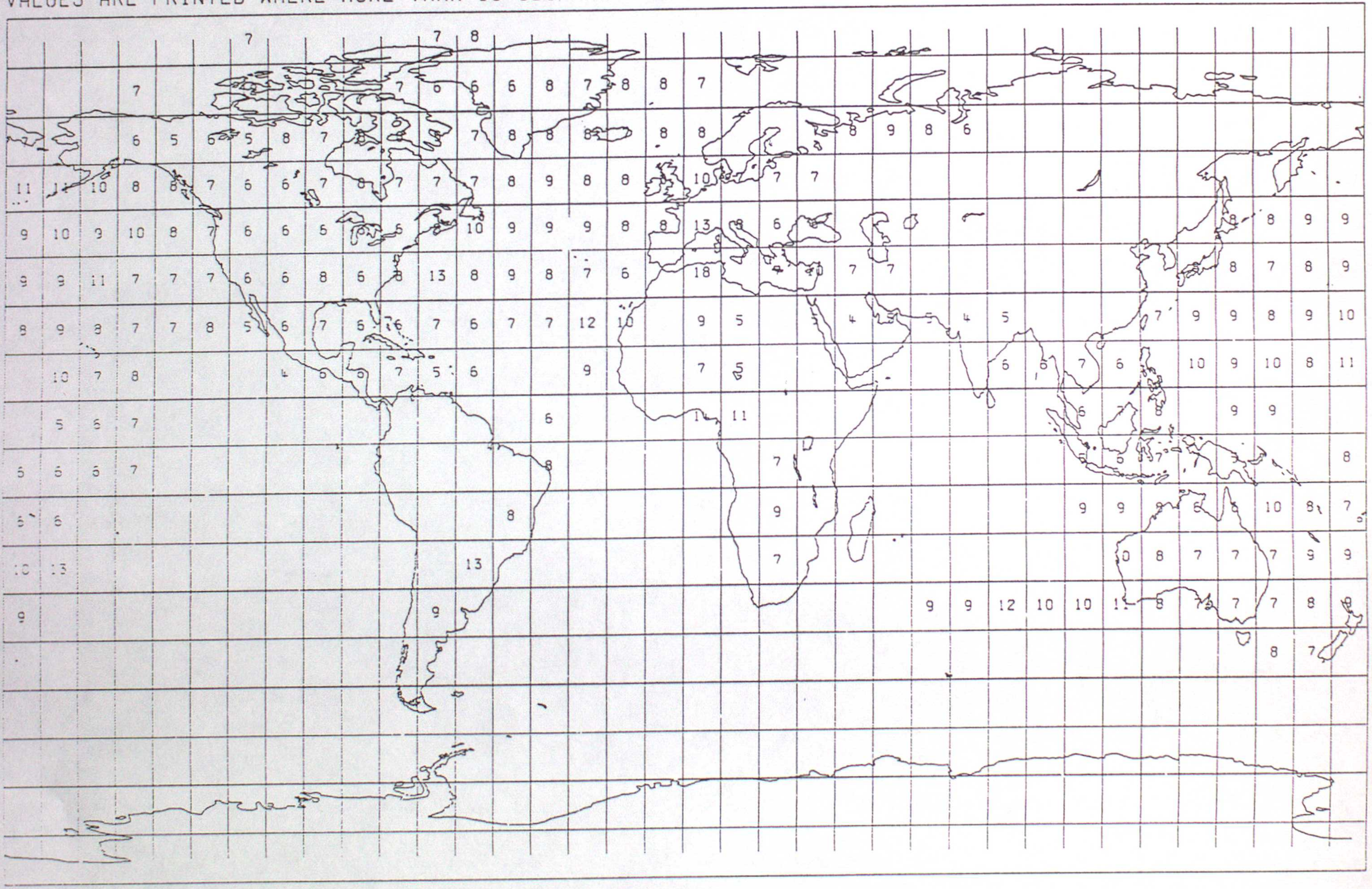
1.8 .7 1.6 1.7 1.8 1.6 1.1 0.9 0.7 0.1
1.3 1.0 1.7 1.3 0.5 0.2 2.0 2 0.4 1.9 1.0 0.3 0.3 1.2 1.9 3.6 2.0 3.0 3.5 2.8
3.2 1.3 2.0 1.4 0.4 1.1 1.5 0.5 1.7 1.8 0.8 1.1 1.7 1.3 0.5 0.8 0.6 0.3 2 2.7 3.1
1.1 1.6 1.8 -0.4 0.5 0.4 0.7 0.8 0.5 1.1 1.0 0.9 0.7 0.4 0.3 0.9 -0.3 1 0.4 0.9 1.3 1.0 1.2
2.0 2.0 3.3 0.7 1.6 0.3 0.5 0.3 0.5 0.5 1.0 1.5 1.3 1.1 1.7 1.5 0.8 -9.8 0.8 2.4 2.1 2.0 1.1 1.7 1.2 1.3
2.8 3.4 2.6 2.2 1.8 3.3 0.9 1.0 0.7 1.0 2.3 2.4 1.7 2.8 1.3 1.5 2.7 -0.2 0.6 1.5 1.9 2.8 0.8 1.2 0.1 1.5 2.5 2.2 2.3 1.7 2.9
4.3 1.6 2.0 0.5 1.3 1.8 4.0 1.5 1.5 1.8 -0.4 1.3 -0.2 0.4 1.7 1.3 3.1 2.3 2.0 2.1 0.3
-1.1 0.9 0.7 0.0 -3.3 -1.1 0.8 2.2 3.8 2.1 2.8
0.6 0.0 -0.3 3.0 2.8 2.7 1.6 2.2 2.5 3.9 2.4 1.3
1.2 0.9 2.3 2.8 1.8 2.8 1.0 0.8 1.1 -0.5 0.6 1.0
1.5 1.1 -1.5 1.4 2.0 0.5 1.7 1.4 1.2 1.2 2.2
1.5 -3.0 0.4 1.1 1.7 0.0 -0.9 3.1 2.2 0.9 0.8 0.7 0.9 3.3
0.8 1.8

AIRCRAFT : RMS O-B VECTOR (M/S) BETWEEN 70 AND 500 HPA FIGURE 7
SEPTEMBER 1994
OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT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9 9 11 7 7 7 6 6 8 6 8 13 8 9 8 7 6 18 7 7 8 7 8 9
8 9 8 7 7 8 5 6 7 6 6 7 6 7 7 12 10 9 5 4 4 5 7 9 9 8 9 10
10 7 8 4 6 6 7 5 6 9 7 5 6 6 7 6 10 9 10 8 11
5 6 7 6 11 11 6 7 8 9 9
5 6 6 7 8 7 5 7 8
6 6 8 9 9 9 8 6 8 10 8 7
10 13 13 7 10 8 7 7 7 9 9
9 9 9 9 12 10 10 11 8 7 7 7 8 8
8 7

TABLE 5

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:September, 94

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from Bracknell global model.

Observation times :00 UTC and 12 UTC.

Level(s) monitored :Standard levels between 1000.0 - 30.0 hPa

Element monitored :GEOPOTENTIAL HEIGHT IN metres

Parameters monitored

:NUM OBS :Number of observations available at level shown during period.

:NUM GROSS :Number of gross errors at level shown during period.

:% REJ :Percentage of observations rejected by quality control at level shown during period.

:SD :SD of difference of observations from background values at level shown excluding those with gross errors.

:BIAS :Mean difference of observations from background values at level shown excluding those with gross errors.

:RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

:NUM LEVELS :Number of levels satisfying selection criteria.

GROSS ERROR LIMITS :Defined in Appendix I.1

SELECTION CRITERIA : ≥ 3 levels with ≥ 10 observations and ≥ 100 m weighted RMS.

ONLY THE WORST LEVEL IS SHOWN WITH UNWEIGHTED RMS

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS	NUM LEVELS
23418	12	Z	200	65/ 57	23	0	49.4	106.2	117.1	9
23933	12	Z	150	61/ 69	19	0	71.9	79.3	107.0	9
33791	12	Z	100	48/ 33	22	0	84.2	118.6	145.5	9
37985	00	Z	250	39/ 49	16	4	47.3	82.8	95.3	4
41594	00	Z	500	32/ 73	14	0	29.0	-54.6	61.8	5
42027	12	Z	200	34/ 75	18	0	82.4	125.4	150.1	6
42101	00	Z	100	30/ 76	11	0	148.6	-11.7	149.1	5
42101	12	Z	250	30/ 76	17	1	77.0	48.8	91.2	4
42339	00	Z	50	26/ 73	11	0	143.4	94.4	171.7	7
42339	12	Z	70	26/ 73	7	4	120.8	185.7	221.6	7
42361	00	Z	150	26/ 78	10	0	114.2	69.0	133.4	7
42361	12	Z	50	26/ 78	11	0	190.4	49.5	196.7	7
42369	00	Z	70	27/ 81	11	1	177.9	96.9	202.6	7
42369	12	Z	200	27/ 81	17	1	125.9	68.4	143.3	8
42379	00	Z	70	27/ 83	11	0	142.1	100.9	174.3	8
42379	12	Z	70	27/ 83	9	3	180.6	70.4	193.8	9
42410	00	Z	30	26/ 92	15	1	146.1	193.3	242.3	8
42410	12	Z	70	26/ 92	15	0	152.1	50.9	160.3	7
42492	00	Z	150	26/ 85	24	0	130.8	60.7	144.1	7
42492	12	Z	150	26/ 85	15	2	108.9	-2.8	108.9	4
42647	00	Z	100	23/ 73	17	0	150.1	2.2	150.1	7
42647	12	Z	50	23/ 73	10	1	140.9	193.1	239.0	8
42724	00	Z	100	24/ 91	10	2	115.0	102.1	153.8	6
42724	12	Z	200	24/ 91	10	0	91.3	44.0	101.4	4
42867	00	Z	30	21/ 79	10	1	130.2	175.6	218.6	4
42875	00	Z	200	21/ 82	13	1	111.5	68.8	131.0	6
42875	12	Z	300	21/ 82	12	0	56.5	52.3	77.0	4
42971	00	Z	150	20/ 86	26	0	90.7	36.4	97.7	7
42971	12	Z	70	20/ 86	18	1	159.0	121.3	200.0	8
43003	00	Z	50	19/ 73	12	0	183.4	-20.8	184.6	7
43003	12	Z	150	19/ 73	20	0	77.5	135.2	155.8	7
43014	12	Z	70	20/ 75	11	1	143.4	151.8	208.8	7
43128	00	Z	50	17/ 78	16	0	189.5	42.8	194.2	8
43128	12	Z	50	17/ 78	12	2	134.8	167.2	214.8	8
43150	12	Z	200	18/ 83	21	0	86.4	-2.7	86.4	4
43185	00	Z	200	16/ 81	26	0	104.6	13.8	105.5	6
43185	12	Z	150	16/ 81	14	2	131.3	79.1	153.3	6
43192	12	Z	100	15/ 74	15	1	164.2	14.3	164.8	7
43285	00	Z	70	13/ 75	16	1	151.6	-99.1	181.1	4
43285	12	Z	70	13/ 75	19	0	150.5	43.4	156.6	5
43295	00	Z	70	13/ 78	12	2	77.7	230.2	243.0	9
43295	12	Z	100	13/ 78	8	3	87.8	149.1	173.0	4
43333	12	Z	70	12/ 93	9	1	167.7	-63.0	179.1	4
43346	00	Z	30	11/ 80	11	0	189.7	115.0	221.8	6
43346	12	Z	100	11/ 80	18	0	101.9	40.3	109.6	4
43353	12	Z	100	10/ 76	15	0	138.3	27.5	141.0	5
43369	00	Z	150	8/ 73	18	0	122.3	-88.3	150.9	8
43369	12	Z	70	8/ 73	18	4	118.4	78.4	142.0	5
43371	00	Z	100	8/ 77	25	3	129.1	-88.8	156.6	7
43371	12	Z	50	8/ 77	21	1	188.8	105.1	216.1	9
52323	12	Z	150	42/ 97	30	0	26.0	91.4	95.0	4
53513	12	Z	150	41/ 107	28	0	45.5	91.3	102.0	7
54135	00	Z	70	44/ 122	26	1	123.9	104.1	161.9	7
54135	12	Z	250	44/ 122	29	1	50.6	65.3	82.6	8
54497	00	Z	30	40/ 124	17	0	93.2	151.2	177.6	7
56691	12	Z	100	27/ 104	24	0	44.8	99.7	109.3	4
56739	12	Z	100	25/ 98	30	0	49.6	129.5	138.6	5
56985	12	Z	100	23/ 103	30	0	29.6	115.0	118.8	4
57679	00	Z	100	28/ 113	26	0	38.9	132.1	137.7	4
57679	12	Z	100	28/ 113	20	0	46.4	133.1	141.0	6

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS	NUM LEVELS
57957	00	Z	100	25/ 110	30	0	42.1	130.1	136.8	5
57957	12	Z	100	25/ 110	28	0	38.7	141.8	147.0	6
57972	12	Z	100	26/ 113	28	0	40.2	118.9	125.5	4
58203	00	Z	150	33/ 116	27	0	34.7	85.7	92.5	5
58424	00	Z	100	31/ 117	29	0	29.2	139.8	142.8	8
58424	12	Z	100	31/ 117	30	0	31.1	134.8	138.4	7
58665	00	Z	100	29/ 121	29	0	47.2	114.9	124.2	6
58847	00	Z	100	26/ 119	28	0	42.5	136.3	142.8	6
59758	12	Z	100	20/ 110	26	0	45.6	125.5	133.5	5
59981	00	Z	100	17/ 112	27	0	73.2	102.1	125.6	5
59981	12	Z	100	17/ 112	21	2	41.1	109.1	116.6	4
62378	12	Z	50	30/ 31	9	8	42.5	329.7	332.4	6
80398	12	Z	850	-4/ -70	13	0	27.9	-50.5	57.7	5
83208	12	Z	30	-13/ -60	18	0	50.9	197.3	203.8	4
89592	00	Z	50	-67/ 93	24	0	56.9	153.4	163.6	5
89664	00	Z	200	-78/ 167	14	0	93.1	25.1	96.4	8
91557	12	Z	700	-18/ 168	23	1	8.9	-71.3	71.9	6
96163	00	Z	100	-1/ 100	15	0	102.6	85.0	133.2	5
96237	00	Z	50	-2/ 106	13	0	145.7	92.6	172.7	5
97014	00	Z	200	2/ 125	23	0	42.6	-91.1	100.6	7

AVAILABILITY - TEMP - 500 HPA GEOPOTENTIAL - SEPTEMBER 1994 FIGURE 8
ALL HOURS
10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS
TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS - 1427

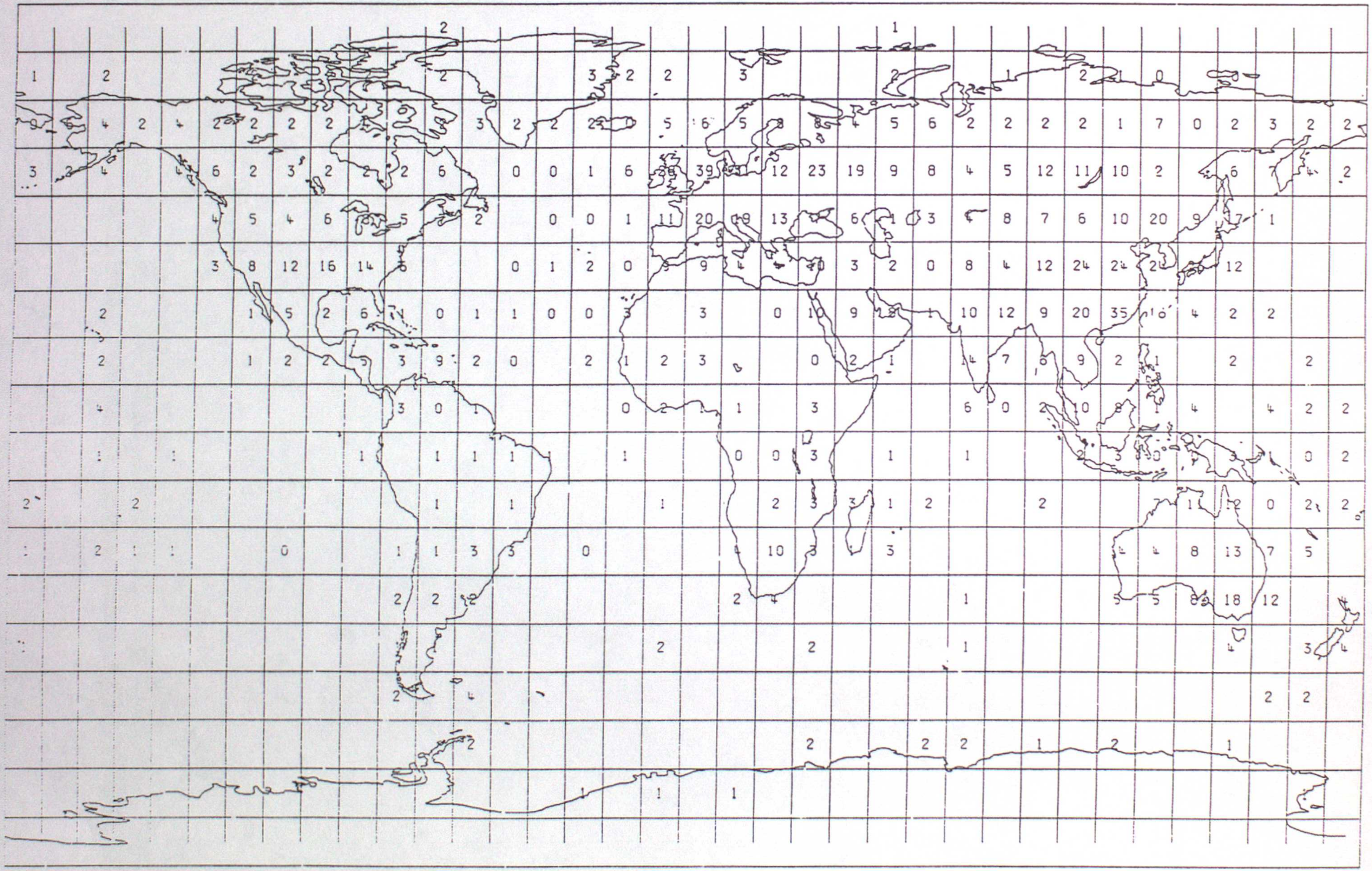


TABLE 6

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:September, 94

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:90°N - 90°S, 180°W - 180°E.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:00 UTC and 12 UTC.
Level(s) monitored		:Standard levels between 1000.0 - 100.0 hPa
Element monitored		:VECTOR WIND in m s^{-1}
Parameters monitored		
	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:UBIAS,VBIAS	:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
	:NUM LEVELS	:Number of levels satisfying selection criteria.
GROSS ERROR LIMITS	:Defined in Appendix I.2	
SELECTION CRITERIA	: ≥ 10 observations and ≥ 15 m s^{-1} RMS vector wind.	

ONLY THE STANDARD LEVEL BETWEEN 1000 - 100 hPa WITH HIGHEST RMS IS SHOWN

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	% REJ	UBIAS	VBIAS	RMS	LEVELS
41530	00	V	200	34/ 72	17	0	5	5.0	5.1	17.7	2
67666	12	V	250	-15/ 28	13	0	15	-7.8	1.6	17.0	2
83378	12	V	200	-16/ -48	21	0	0	11.4	4.7	15.0	1

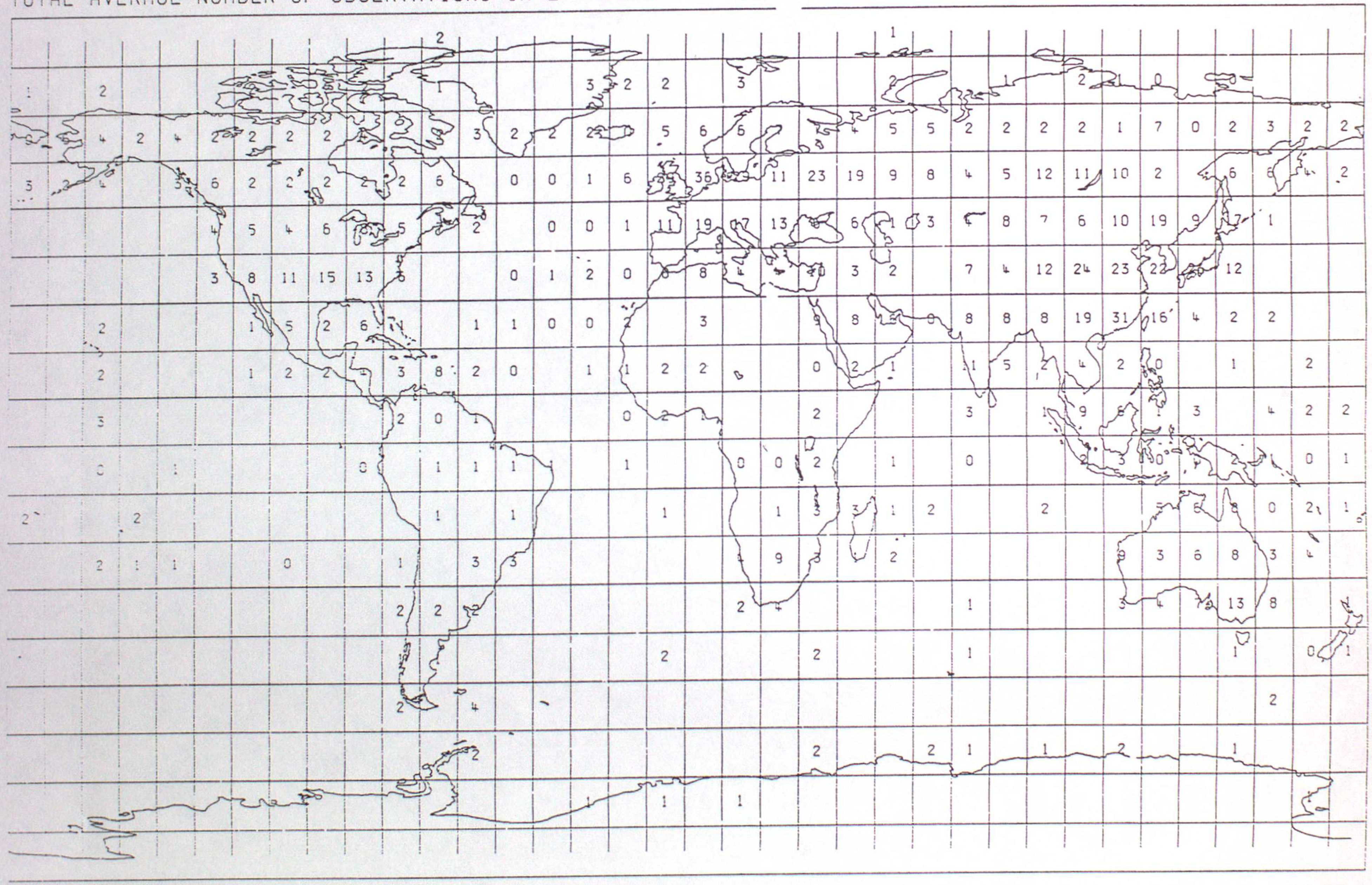
AVAILABILITY - TEMP/PILOT - 300 HPA WIND - SEPTEMBER 1994

ALL HOURS

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS - 1282

FIGURE 9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3 8 11 15 13 3 0 1 2 0 0 8 4 0 3 2 7 4 12 24 23 22 12
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2 2 1 1 0 1
2 4 2
2 2 2 1 1 2 1
1 1 1

TABLE 7

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:September, 94

Monitoring procedures

Period	:One calendar month.
Data monitored	:Reports from each unique identifier for radiosonde TEMPs.
Area monitored	:90°N - 90°S, 180°W - 180°E.
Standard of comparison	:Background field from Bracknell global model.
Observation times	:00 UTC and 12 UTC.
Level(s) monitored	:Standard levels between 500.0 - 150.0 hPa
Element monitored	:WIND DIRECTION in degrees

Parameters monitored

:NUM OBS	:Average number of observations at all levels.
:BIAS	:Mean difference of observations from background values from all levels.
:MAX SPREAD	:(For observation - background values) Maximum absolute difference of SD at any level from SD at all levels
:SD	:SD of difference of observations from background values at all levels.

SELECTION CRITERIA :NUM OBS ≥ 5, and
ABSOLUTE BIAS ≥ 10°, with
SD < 30°, and
MAX SPREAD < 10°

WMO IDENT	OBS TIME	ELM	LAT/LONG	NUM OBS	BIAS	MAX SPREAD	SD
10410	00	DD	51/ 7	24	14.4	2.6	15.9
10410	12	DD	51/ 7	25	14.2	3.4	15.6
24641	00	DD	64/ 122	24	14.4	7.1	12.6
24641	12	DD	64/ 122	22	14.3	8.3	14.2
25399	12	DD	66/-170	13	14.5	7.6	17.8
40179	00	DD	32/ 35	28	-11.4	2.7	12.4
40430	00	DD	25/ 40	10	-17.3	9.0	20.0
41114	12	DD	18/ 43	18	12.8	6.0	21.3
41923	00	DD	24/ 90	13	14.5	7.4	20.4
42339	12	DD	26/ 73	20	13.8	4.5	19.4
48568	00	DD	7/ 101	10	-11.0	5.9	15.9
57516	00	DD	30/ 106	22	-11.3	7.7	20.2
60630	12	DD	27/ 2	24	12.1	9.4	19.9
78866	12	DD	18/ -63	9	25.1	8.3	24.2
91592	00	DD	-22/ 166	29	-12.6	3.6	12.9
96749	00	DD	-6/ 107	15	-10.3	4.1	26.1

MONITORING OF SATELLITE WINDS

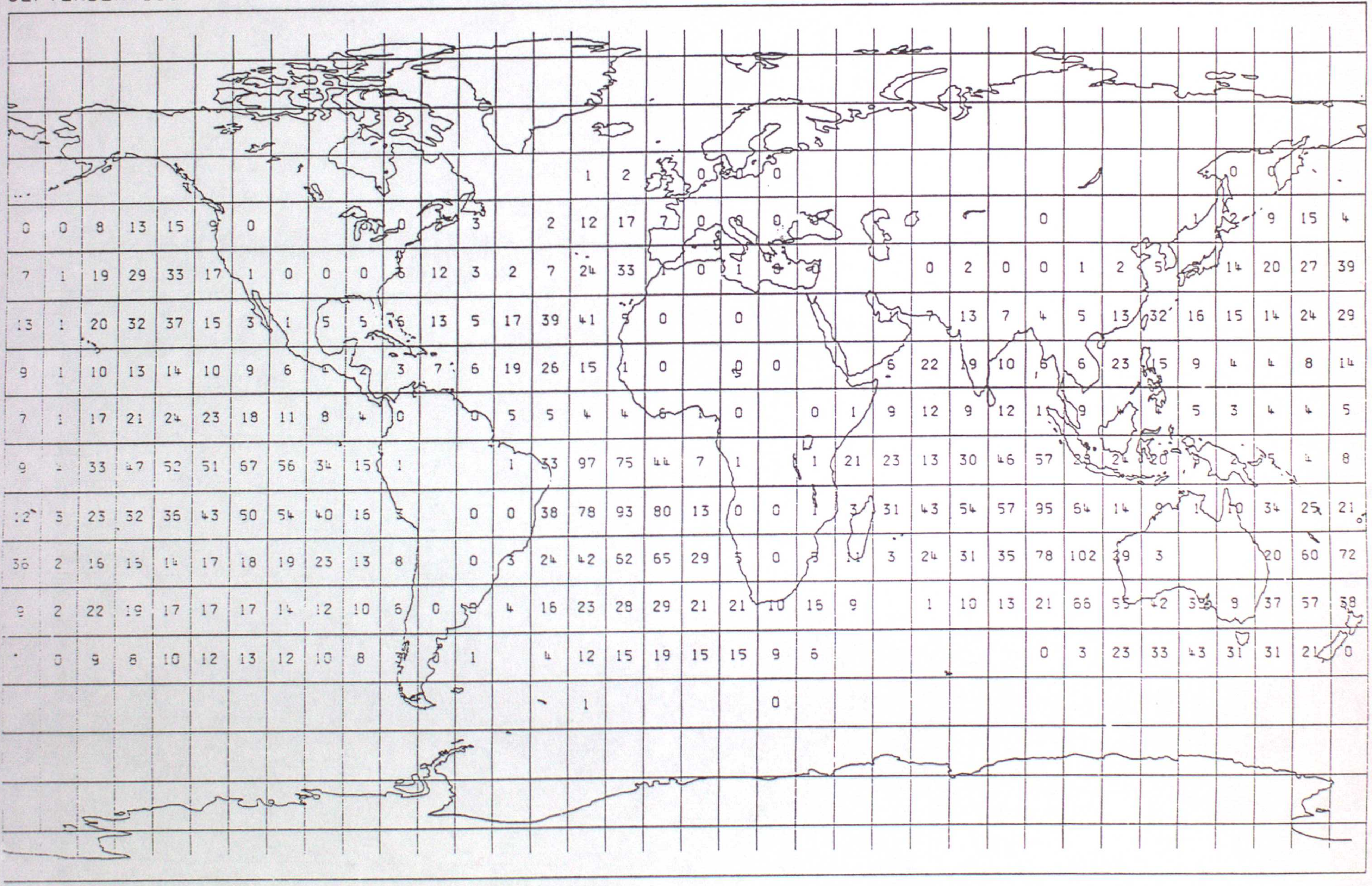
MONITORING CENTRE: BRACKNELL

MONTH:September, 94

Monitoring procedures

Period	:One calendar month.
Data monitored	:Reports from GOES, METEOSAT, GMS, INSAT.
Standard of comparison	:Background field from Bracknell global model.
Selection Criteria	:number of observations > 10.
Data Extracted	:Layer:701 - 1000 hPa 401 - 700 hPa 101 - 400 hPa
	:Mean wind
	:Mean observation minus background vector wind differences
	:Mean observation minus background speed differences
	:RMS of observation minus background vector differences

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 701 AND 1000 HPA FIGURE 10
SEPTEMBER 1994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9 1 10 13 14 10 9 6 4 2 3 7 6 19 26 15 1 0 0 0 6 22 19 10 6 6 23 15 9 4 4 8 14
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36 2 16 15 14 17 18 19 23 13 8 0 3 24 42 62 65 29 5 0 3 14 3 24 31 35 78 102 39 3 20 60 72
9 2 22 19 17 17 17 14 12 10 6 0 9 4 16 23 28 29 21 21 10 16 9 1 10 13 21 66 55 42 39 9 37 57 58
0 9 8 10 12 13 12 10 8 3 0 1 4 12 15 19 15 15 9 6 0 3 23 33 43 31 31 21 0
1 0

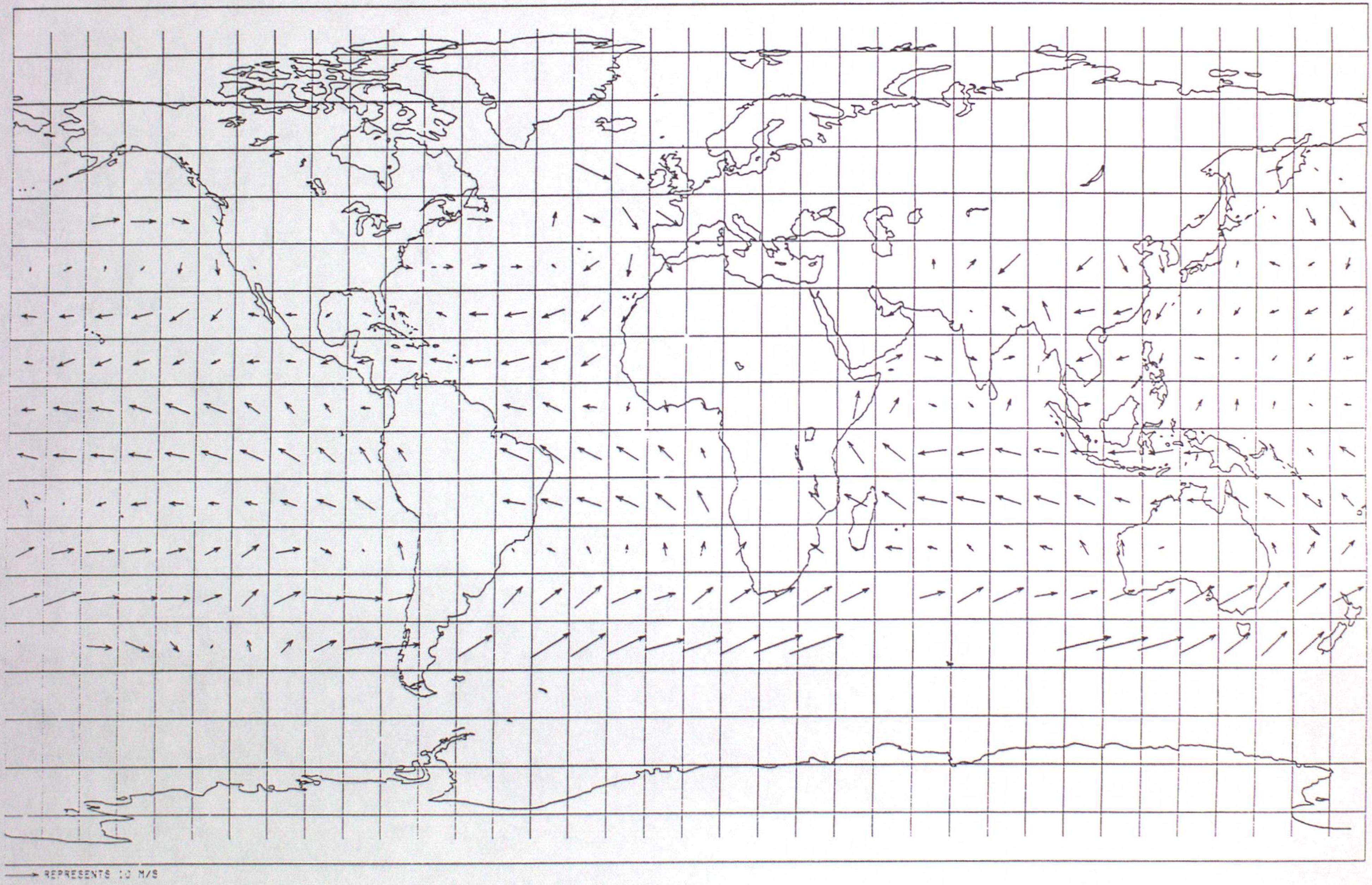
SATOB VECTOR MEAN WINDS BETWEEN 701-1000 HPA

SEPTEMBER 1994

ALL OBSERVATIONS

ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 11


→ REPRESENTS 10 M/S

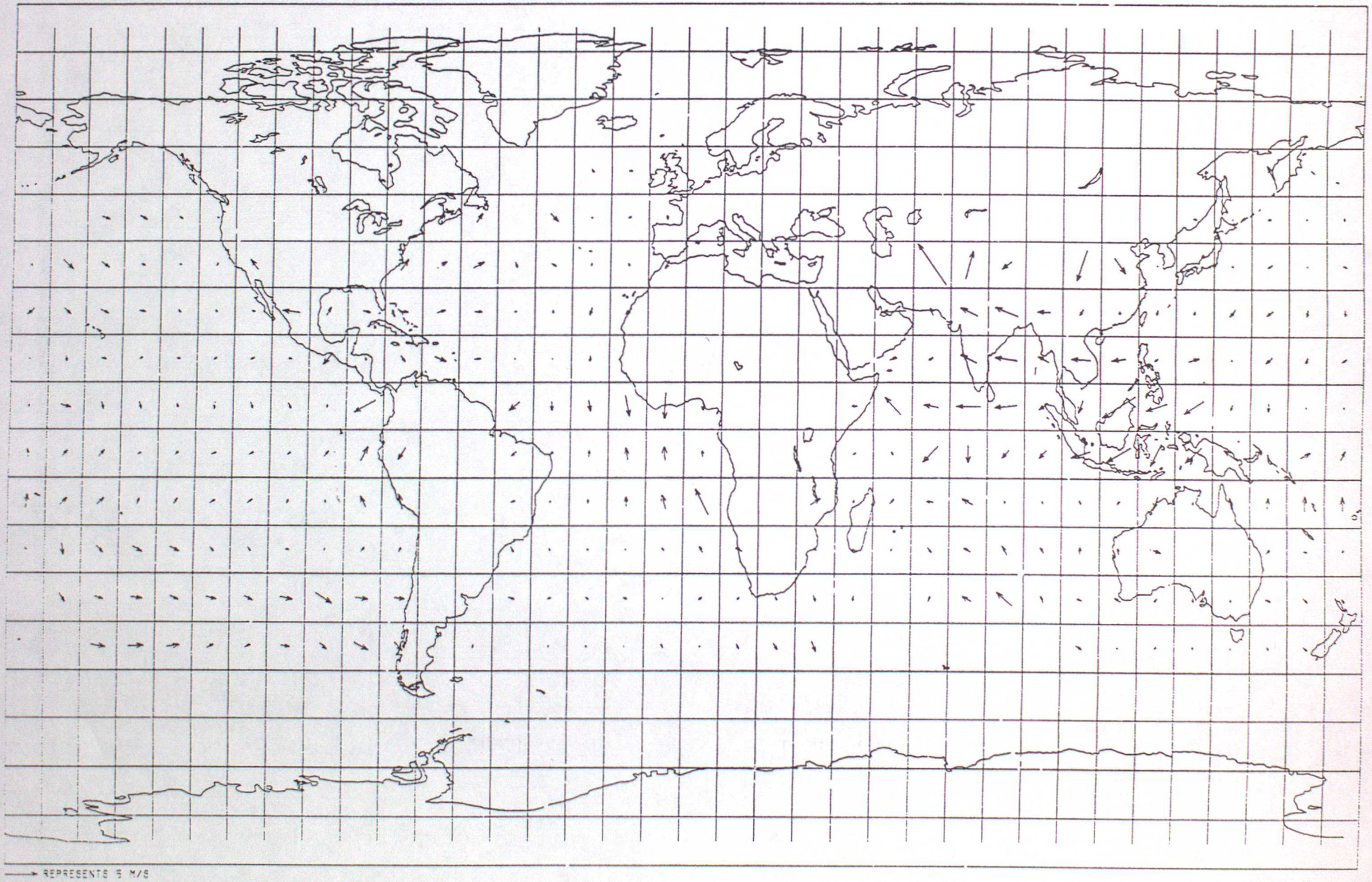
SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 701-1000 HPA

FIGURE 12

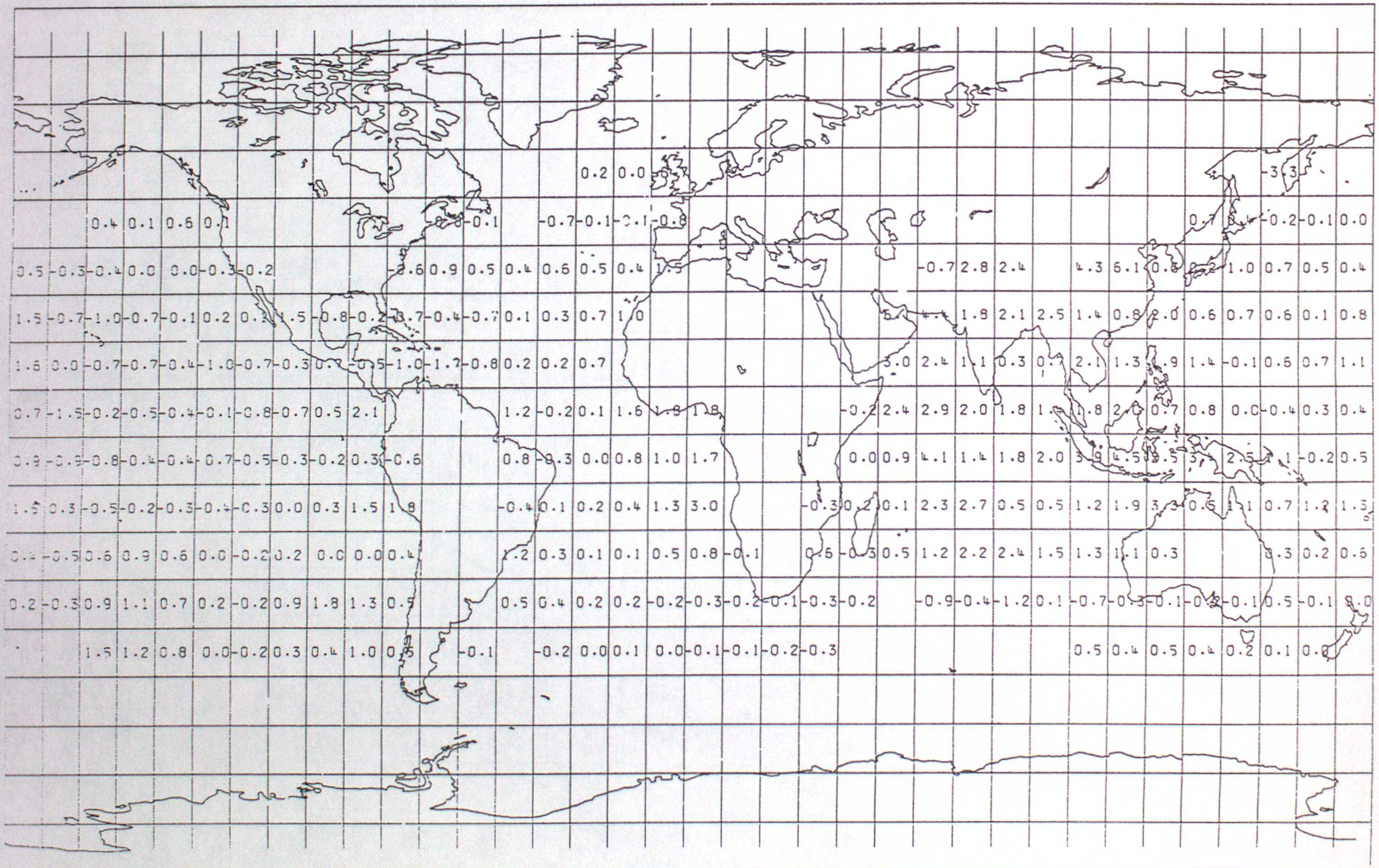
SEPTEMBER 1994

ALL OBSERVATIONS

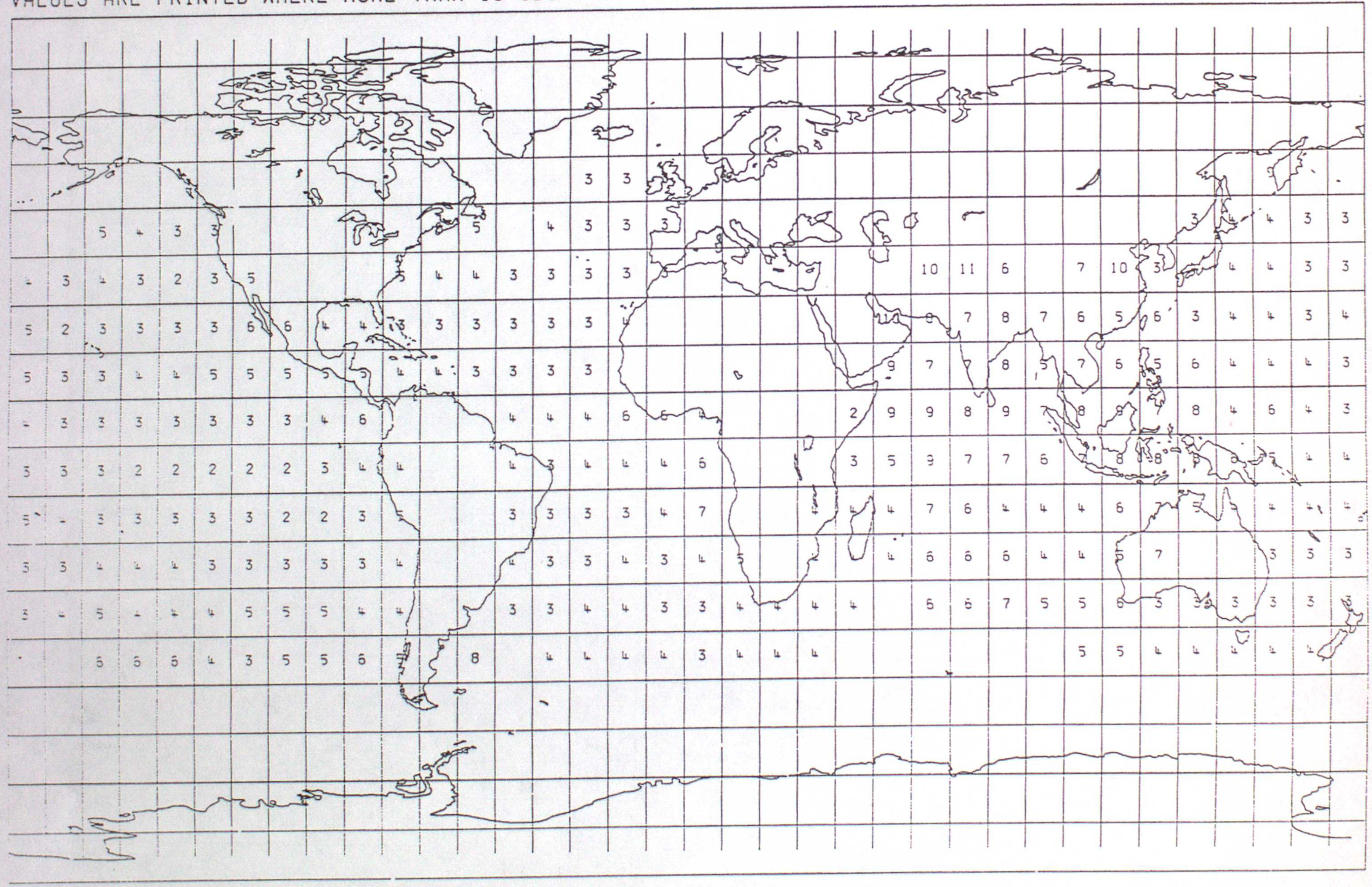
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT



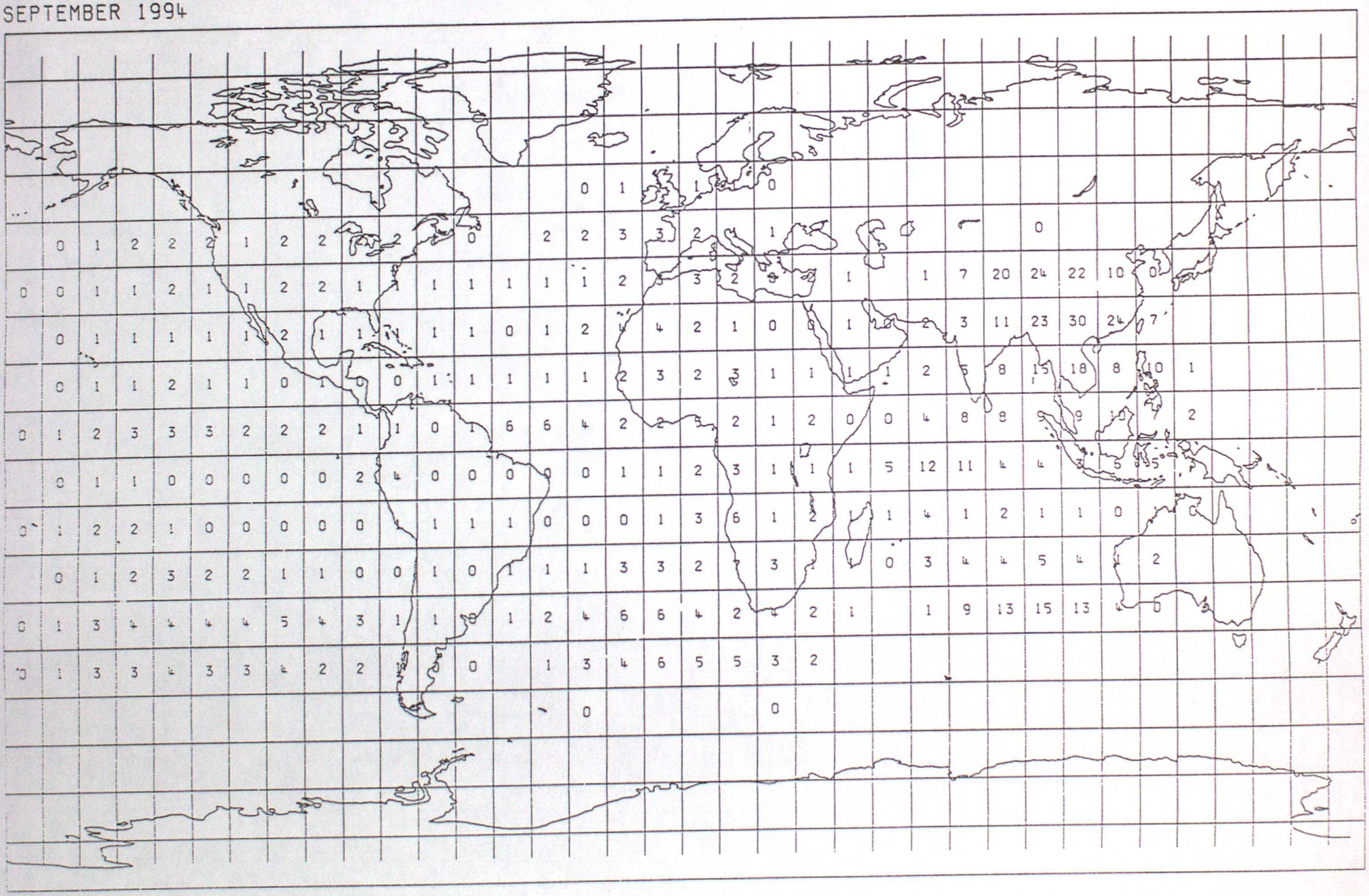
SATOBS : MEAN O-B SPEED DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA FIGURE 13
SEPTEMBER 1994
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


0.2 0.0 -3 3
0.4 0.1 0.6 0.1 -0.1 -0.7 -0.1 -0.1 -0.8 0.7 0.4 -0.2 -0.1 0.0
0.5 -0.3 -0.4 0.0 0.0 -0.3 -0.2 -0.6 0.9 0.5 0.4 0.6 0.5 0.4 1.5 -0.7 2.8 2.4 4.3 6.1 0.6 2.2 1.0 0.7 0.5 0.4
1.5 -0.7 -1.0 -0.7 -0.1 0.2 0.3 1.5 -0.8 -0.2 3.7 -0.4 -0.7 0.1 0.3 0.7 1.0 5.4 4.4 1.8 2.1 2.5 1.4 0.8 2.0 0.6 0.7 0.6 0.1 0.8
1.6 0.0 -0.7 -0.7 -0.4 -1.0 -0.7 -0.3 0.7 -0.5 -1.0 -1.7 -0.8 0.2 0.2 0.7 3.0 2.4 1.1 0.3 0.7 2.1 1.3 3.9 1.4 -0.1 0.6 0.7 1.1
0.7 -1.5 -0.2 -0.5 -0.4 -0.1 -0.8 -0.7 0.5 2.1 1.2 -0.2 0.1 1.6 1.9 1.8 -0.2 2.4 2.9 2.0 1.8 1.4 1.8 2.0 0.7 0.8 0.0 -0.4 0.3 0.4
0.9 -0.9 -0.8 -0.4 -0.4 0.7 -0.5 -0.3 -0.2 0.3 -0.6 0.8 -0.3 0.0 0.8 1.0 1.7 0.0 0.9 4.1 1.4 1.8 2.0 3.9 4.5 3.5 3.7 2.5 1.1 -0.2 0.5
1.5 0.3 -0.5 -0.2 -0.3 -0.4 -0.3 0.0 0.3 1.5 1.8 -0.4 0.1 0.2 0.4 1.3 3.0 -0.3 0.2 0.1 2.3 2.7 0.5 0.5 1.2 1.9 3.3 0.5 1.1 0.7 1.2 1.3
0.4 -0.5 0.6 0.9 0.6 0.0 -0.2 0.2 0.0 0.0 0.4 1.2 0.3 0.1 0.1 0.5 0.8 -0.1 0.6 -0.3 0.5 1.2 2.2 2.4 1.5 1.3 1.1 0.3 0.3 0.2 0.6
0.2 -0.3 0.9 1.1 0.7 0.2 -0.2 0.9 1.8 1.3 0.5 0.5 0.4 0.2 0.2 -0.2 -0.3 -0.2 -0.1 -0.3 -0.2 -0.9 -0.4 -1.2 0.1 -0.7 -0.3 -0.1 -0.2 -0.1 0.5 -0.1 0.0
1.5 1.2 0.8 0.0 -0.2 0.3 0.4 1.0 0.5 -0.1 -0.2 0.0 0.1 0.0 -0.1 -0.1 -0.2 -0.3 0.5 0.4 0.5 0.4 0.2 0.1 0.0

SATOBS : RMS O-B VECTOR DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA FIGURE 14
SEPTEMBER 1994
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


3 3
5 4 3 3 5 4 3 3 3 3 4 4 3 3
4 3 4 3 2 3 5 5 4 4 3 3 3 3 10 11 6 7 10 3 4 4 3 3
5 2 3 3 3 3 6 6 4 4 3 3 3 3 3 3 4 11 8 7 8 7 6 5 6 3 4 4 3 4
5 3 3 4 4 5 5 5 5 5 4 4 3 3 3 3 9 7 7 8 5 7 6 5 6 4 4 4 3
4 3 3 3 3 3 3 3 4 6 4 4 4 6 6 4 2 9 9 8 9 7 8 8 7 8 4 6 4 3
3 3 3 2 2 2 2 2 3 4 4 4 3 4 4 4 6 3 5 9 7 7 6 7 8 8 5 4 4
5 4 3 3 3 3 3 2 2 3 5 3 3 3 3 4 7 4 4 7 6 4 4 4 6 7 5 4 4 4
3 3 4 4 4 3 3 3 3 3 4 4 3 3 4 3 4 5 4 6 6 6 4 4 5 7 3 3 3
3 4 5 4 4 4 5 5 5 4 4 3 3 4 4 3 3 4 4 4 4 6 6 7 5 5 6 3 3 3 3 3 3
6 6 6 4 3 5 5 6 8 4 4 4 4 3 4 4 4 5 5 4 4 4 4 4

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 401 AND 700 HPA FIGURE 15
SEPTEMBER 1994


0 1 1 1 0
0 1 2 2 2 1 2 2 2 0 2 2 3 3 2 1 0
0 0 1 1 2 1 1 2 2 1 1 1 1 1 1 1 2 3 3 2 0 2 1 1 7 20 24 22 10 0
0 1 1 1 1 1 2 1 1 1 1 1 0 1 2 4 4 2 1 0 0 1 0 2 3 11 23 30 24 7
0 1 1 2 1 1 0 1 0 0 1 1 1 1 1 2 3 2 3 1 1 1 1 2 5 8 15 18 8 10 1
0 1 2 3 3 3 2 2 2 1 1 0 1 6 6 4 2 2 5 2 1 2 0 0 4 8 8 9 9 10 2
0 1 1 0 0 0 0 0 2 4 0 0 0 0 0 1 1 2 3 1 1 1 5 12 11 4 4 3 5 5
0 1 2 2 1 0 0 0 0 0 1 1 1 1 0 0 0 1 3 6 1 2 1 1 4 1 2 1 1 0 1 0
0 1 2 3 2 2 1 1 0 0 1 0 1 1 1 3 3 2 7 3 1 1 0 3 4 4 5 4 1 2
0 1 3 4 4 4 4 5 4 3 1 1 0 1 2 4 6 6 4 2 4 2 1 1 9 13 15 13 4 0
0 1 3 3 4 3 3 4 2 2 1 0 0 1 3 4 6 5 5 3 2
0 0

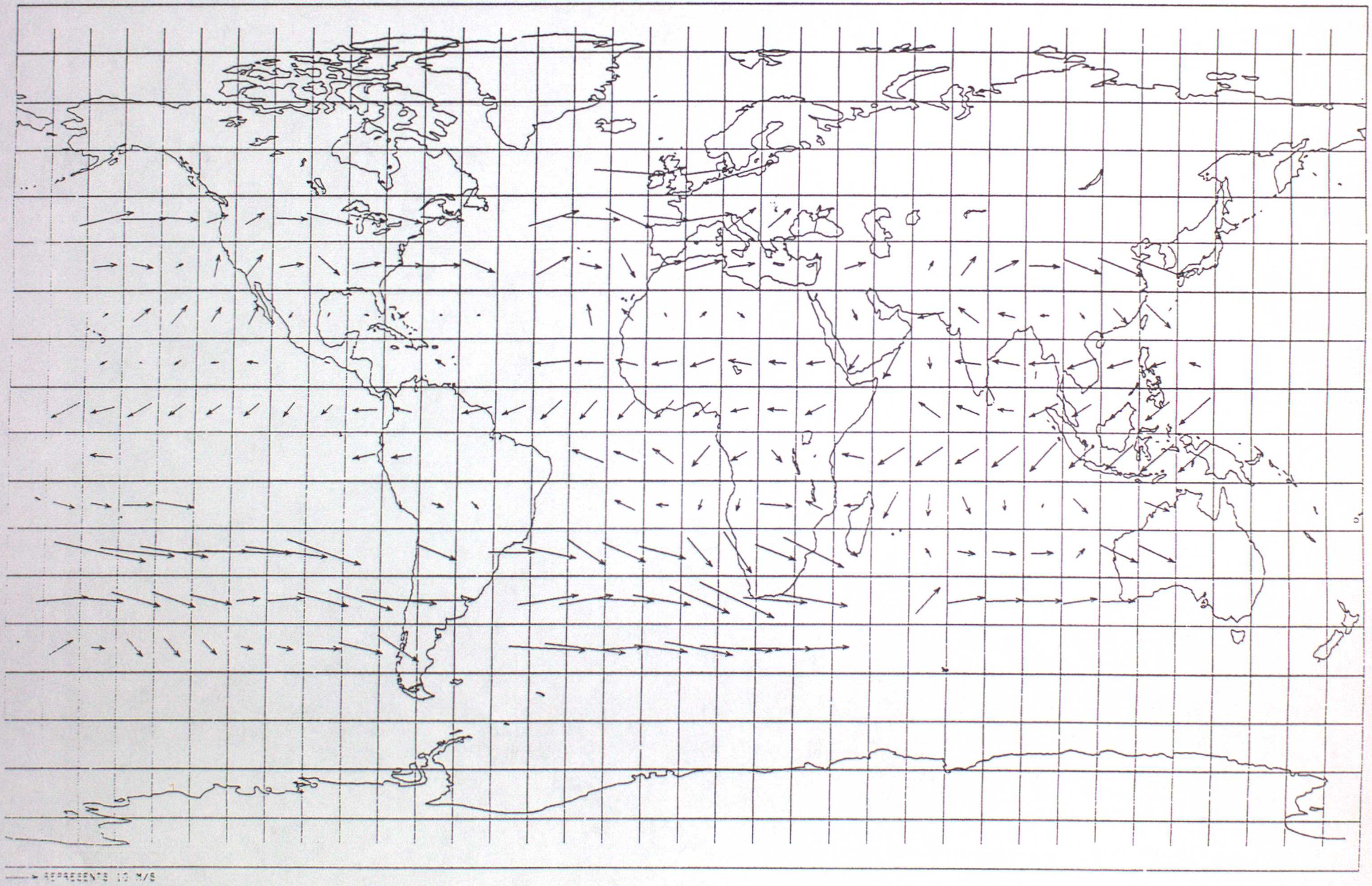
SATOB VECTOR MEAN WINDS BETWEEN 401-700 HPA

FIGURE 16

SEPTEMBER 1994

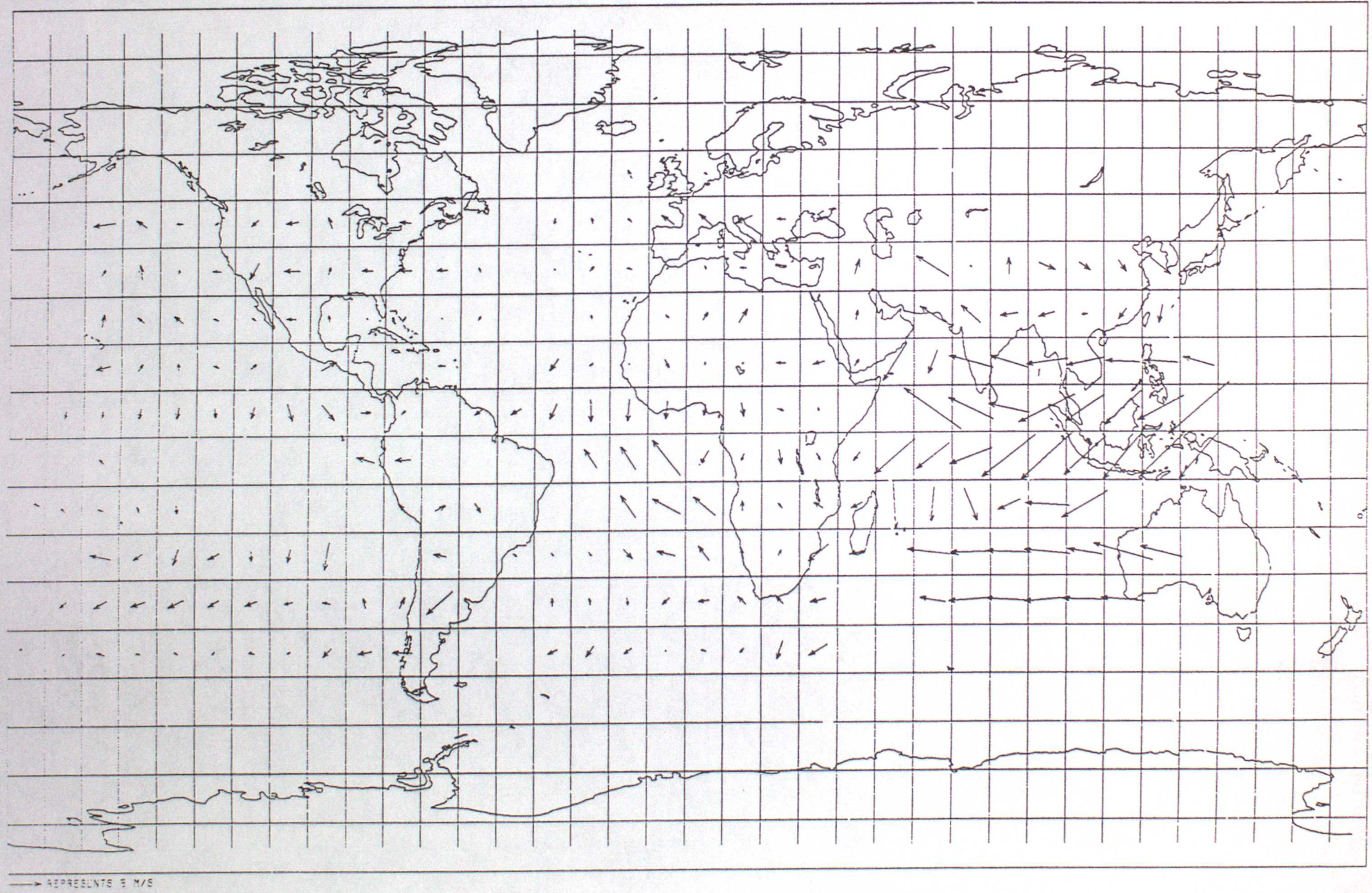
ALL OBSERVATIONS

ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

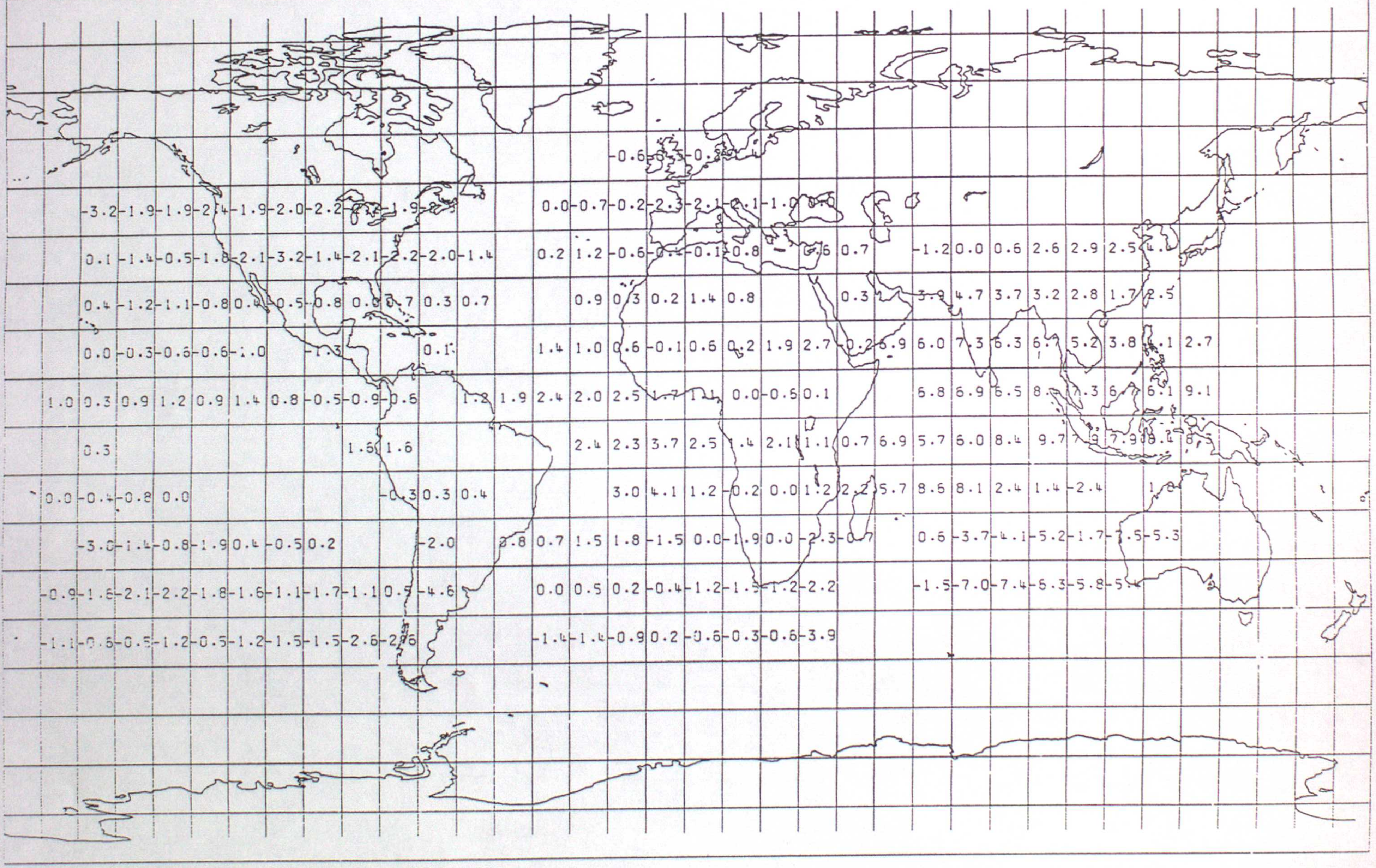

→ REPRESENTS 10 M/S

SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 401-700 HPA
SEPTEMBER 1994
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

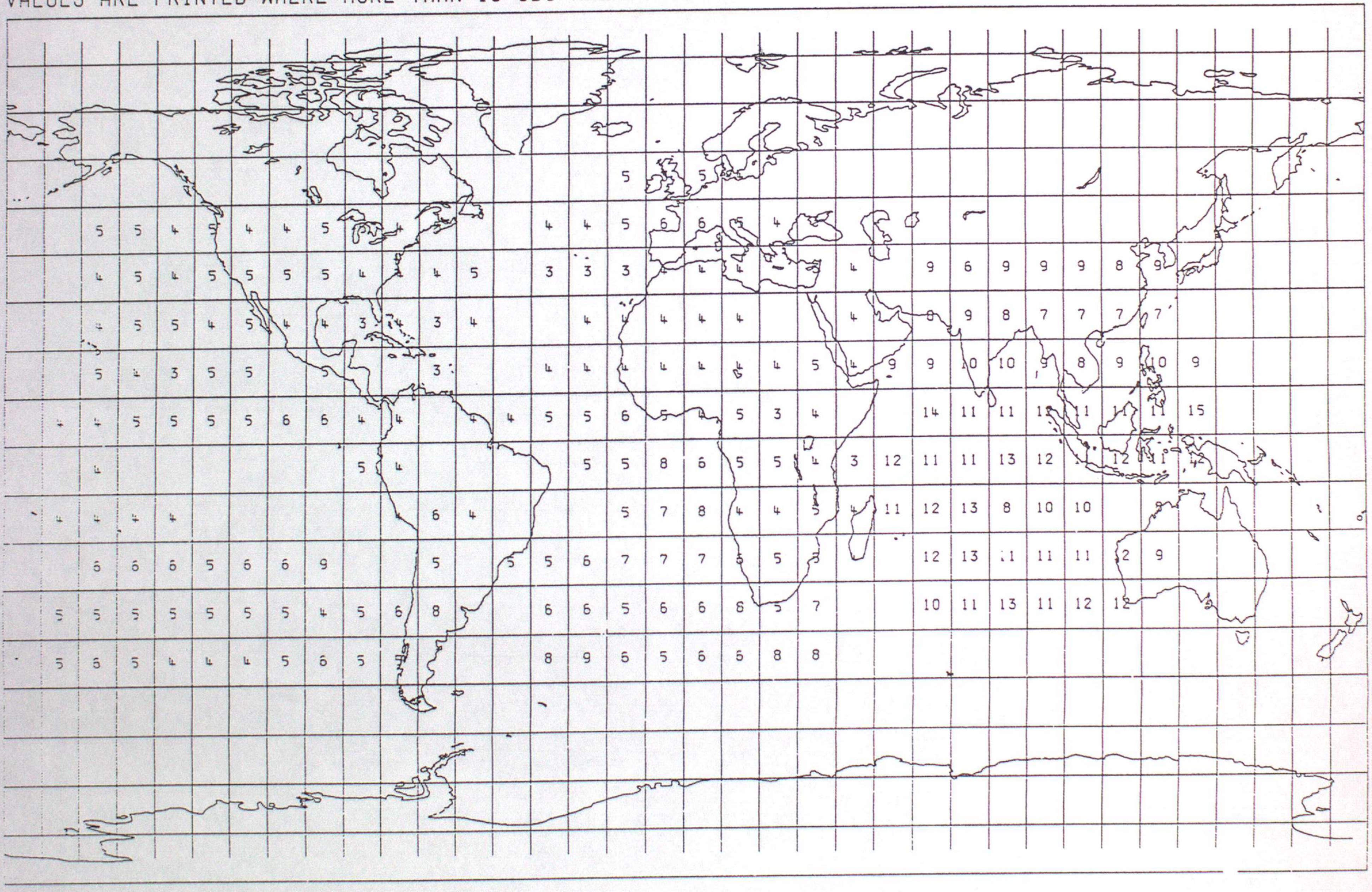
FIGURE 17



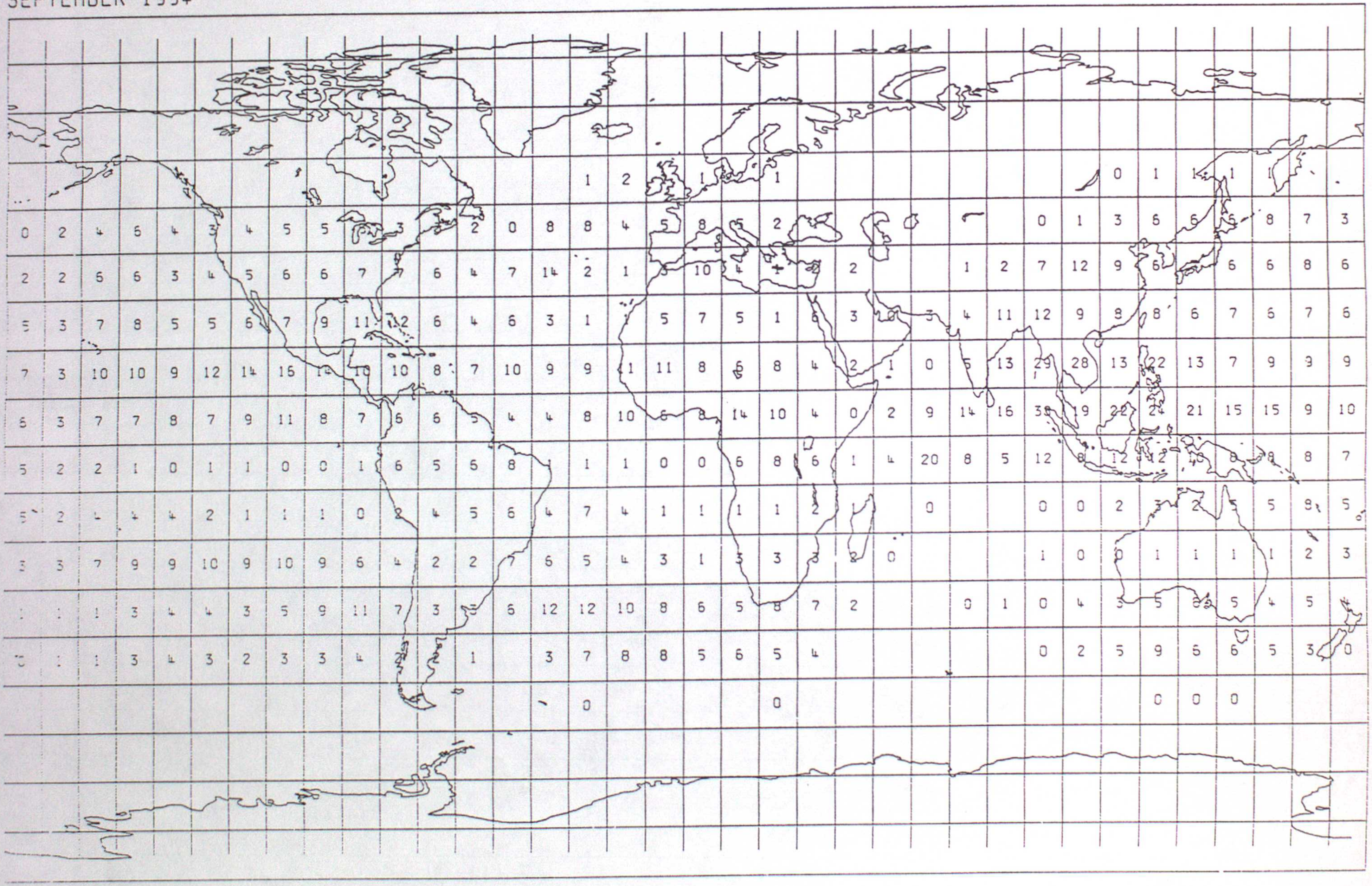
SATOBS : MEAN O-B SPEED DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA FIGURE 18
SEPTEMBER 1994
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


-0.6 -0.5 -0.8
-3.2 -1.9 -1.9 -2.4 -1.9 -2.0 -2.2 -2.2 -1.9 -2.5 0.0 -0.7 -0.2 -2.3 -2.1 -2.1 -1.0 0.0
0.1 -1.4 -0.5 -1.8 -2.1 -3.2 -1.4 -2.1 -2.2 -2.0 -1.4 0.2 1.2 -0.6 -0.4 -0.1 0.8 0.6 0.7 -1.2 0.0 0.6 2.6 2.9 2.5 4.
0.4 -1.2 -1.1 -0.8 0.4 -0.5 -0.8 0.0 0.7 0.3 0.7 0.9 0.3 0.2 1.4 0.8 0.3 3.9 4.7 3.7 3.2 2.8 1.7 2.5
0.0 -0.3 -0.6 -0.6 -1.0 -1.3 0.1 1.4 1.0 0.6 -0.1 0.6 0.2 1.9 2.7 -0.2 5.9 6.0 7.3 6.3 6.7 5.2 3.8 4.1 2.7
1.0 0.3 0.9 1.2 0.9 1.4 0.8 -0.5 -0.9 -0.6 1.2 1.9 2.4 2.0 2.5 1.7 1.1 0.0 -0.5 0.1 6.8 6.9 6.5 8. 7.3 6.7 6.1 9.1
0.3 1.6 1.6 2.4 2.3 3.7 2.5 1.4 2.1 1.1 0.7 6.9 5.7 6.0 8.4 9.7 7.9 7.9 8.4 8.5
0.0 -0.4 -0.8 0.0 -0.3 0.3 0.4 3.0 4.1 1.2 -0.2 0.0 1.2 2.2 5.7 8.6 8.1 2.4 1.4 -2.4 1.8
-3.0 -1.4 -0.8 -1.9 0.4 -0.5 0.2 -2.0 2.8 0.7 1.5 1.8 -1.5 0.0 -1.9 0.0 -2.3 -0.7 0.6 -3.7 -4.1 -5.2 -1.7 -3.5 -5.3
-0.9 -1.6 -2.1 -2.2 -1.8 -1.6 -1.1 -1.7 -1.1 0.5 -4.6 0.0 0.5 0.2 -0.4 -1.2 -1.5 -1.2 -2.2 -1.5 -7.0 -7.4 -6.3 -5.8 -5.4
-1.1 -0.6 -0.5 -1.2 -0.5 -1.2 -1.5 -1.5 -2.6 -2.6 -1.4 -1.4 -0.9 0.2 -0.6 -0.3 -0.6 -3.9

SATOBS : RMS O-B VECTOR DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA FIGURE 19
SEPTEMBER 1994
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT

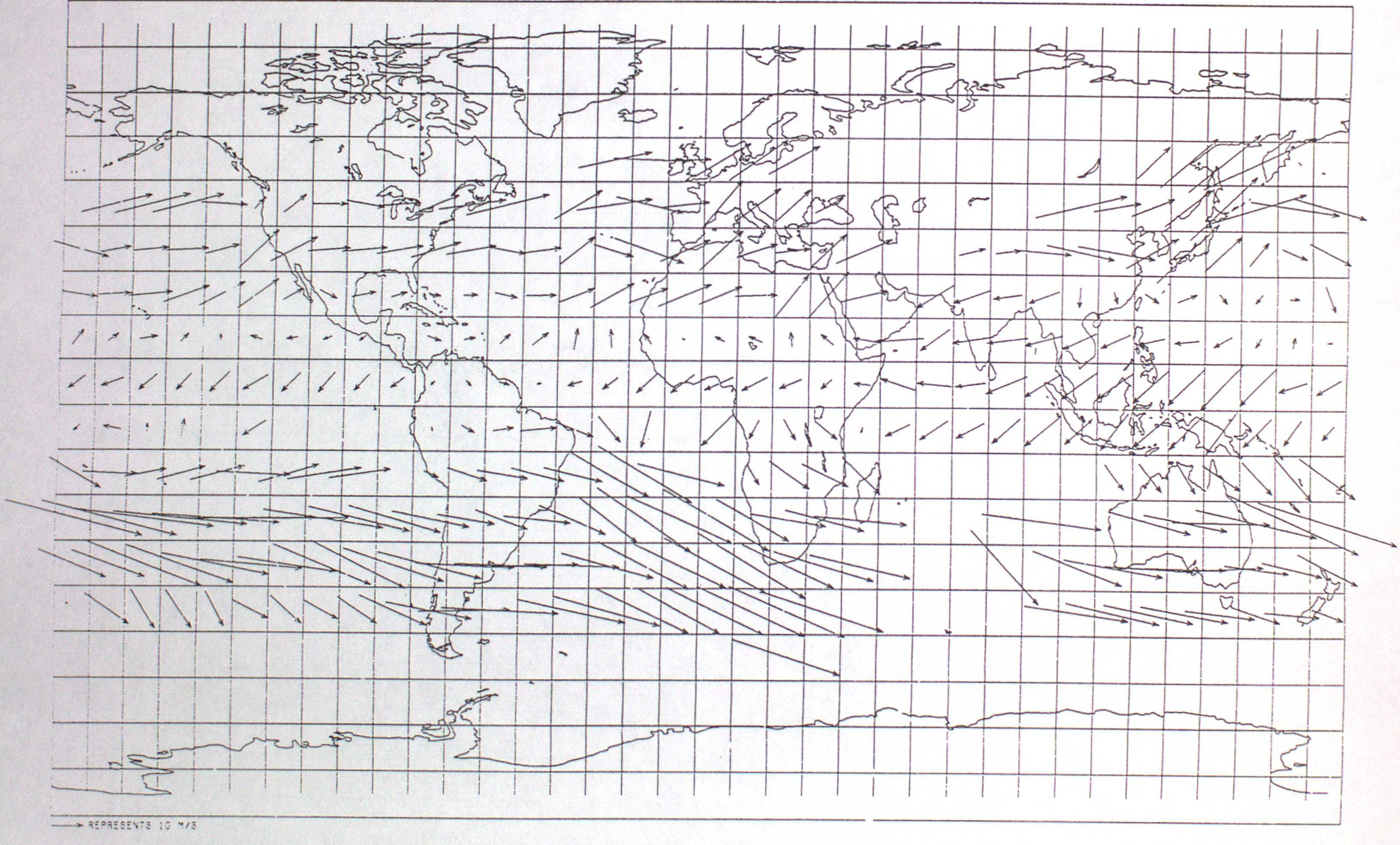

5 5
5 5 4 5 4 4 5 4 4 4 5 6 6 4
4 5 4 5 5 5 5 4 4 4 5 3 3 3 4 4 4 4 4 9 6 9 9 9 8 9
4 5 5 4 5 4 4 3 4 3 4 4 4 4 4 4 4 8 9 8 7 7 7 7
5 4 3 5 5 5 3 4 4 4 4 4 4 4 5 4 9 9 10 10 9 8 9 10 9
4 4 5 5 5 5 6 6 4 4 4 4 5 5 6 5 4 5 3 4 14 11 11 12 11 11 11 15
4 5 4 5 5 8 6 5 5 4 3 12 11 11 13 12 12 11 12
4 4 4 4 6 4 5 7 8 4 4 5 4 11 12 13 8 10 10 9
6 6 6 5 6 6 9 5 5 5 6 7 7 7 5 5 3 12 13 11 11 11 12 9
5 5 5 5 5 5 4 5 6 8 6 6 5 6 6 6 5 7 10 11 13 11 12 12
5 6 5 4 4 4 5 6 5 8 9 6 5 6 6 8 8

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 101 AND 400 HPA FIGURE 20
SEPTEMBER 1994


1 2 1 1 0 1 1 1 1
0 2 4 6 4 3 4 5 5 3 2 0 8 8 4 5 8 5 2 0 1 3 6 6 5 8 7 3
2 2 6 6 3 4 5 6 6 7 7 6 4 7 14 2 1 5 10 4 2 2 1 2 7 12 9 6 6 6 8 6
5 3 7 8 5 5 6 7 9 11 12 6 4 6 3 1 1 5 7 5 1 6 3 3 3 4 11 12 9 8 8 6 7 6 7 6
7 3 10 10 9 12 14 16 14 10 10 8 7 10 9 9 11 11 8 6 8 4 2 1 0 5 13 29 28 13 22 13 7 9 3 9
6 3 7 7 8 7 9 11 8 7 6 6 5 4 4 8 10 6 8 14 10 4 0 2 9 14 16 38 19 22 24 21 15 15 9 10
5 2 2 1 0 1 1 0 0 1 6 5 6 8 1 1 1 0 0 6 8 6 1 4 20 8 5 12 8 12 12 10 8 8 8 7
5 2 4 4 4 2 1 1 1 0 2 4 5 6 4 7 4 1 1 1 1 2 1 0 0 0 2 3 2 5 5 8 5
3 3 7 9 9 10 9 10 9 6 4 2 2 7 6 5 4 3 1 3 3 3 2 0 1 0 0 1 1 1 1 2 3
1 1 1 3 4 4 3 5 9 11 7 3 3 6 12 12 10 8 6 5 8 7 2 0 1 0 4 3 5 6 5 4 5 4
0 1 1 3 4 3 2 3 3 4 2 2 1 3 7 8 8 5 6 5 4 0 2 5 9 5 6 5 3 0
0 0 0 0 0

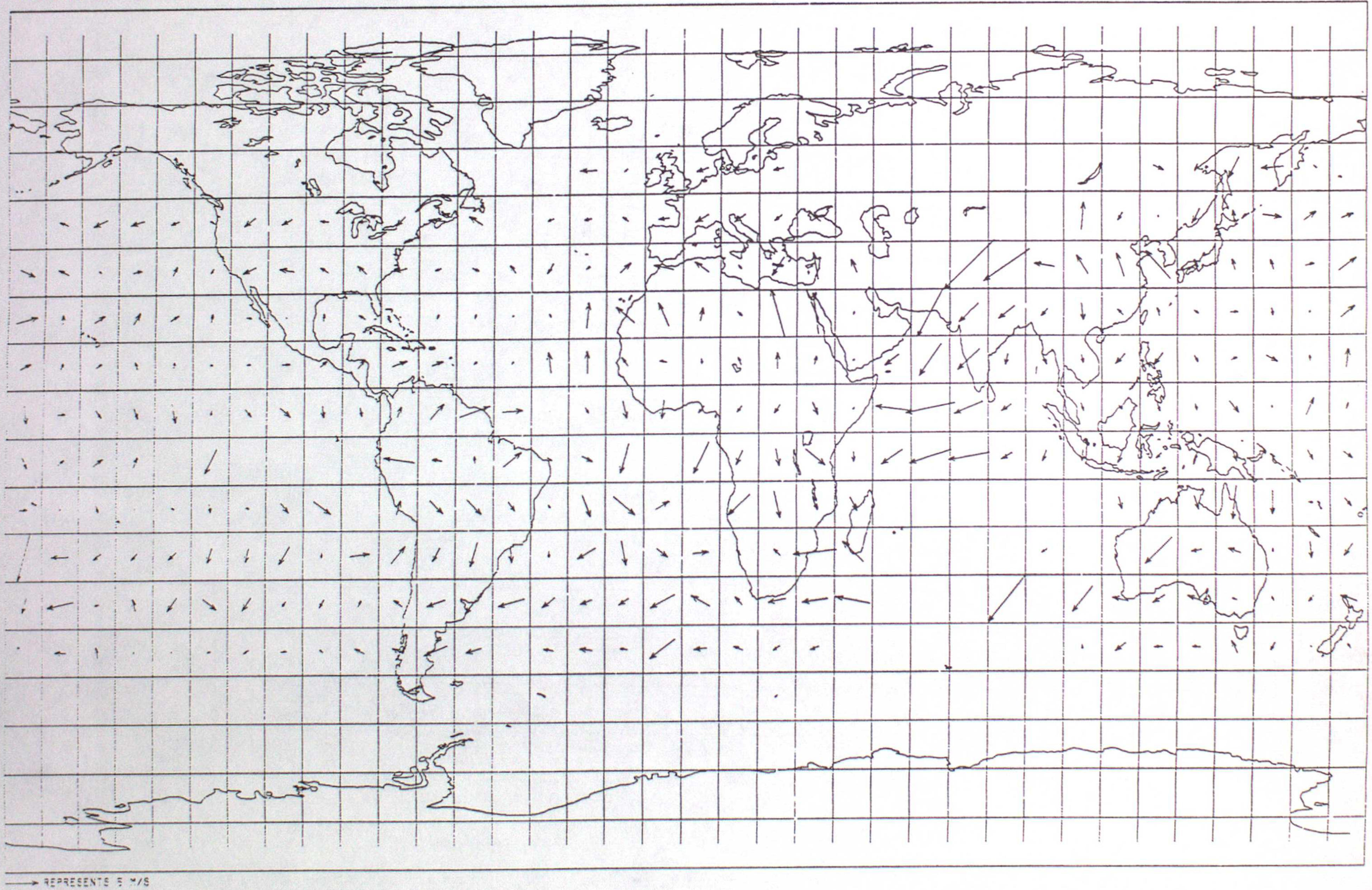
SATOB VECTOR MEAN WINDS BETWEEN 101-400 HPA
SEPTEMBER 1994
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 21

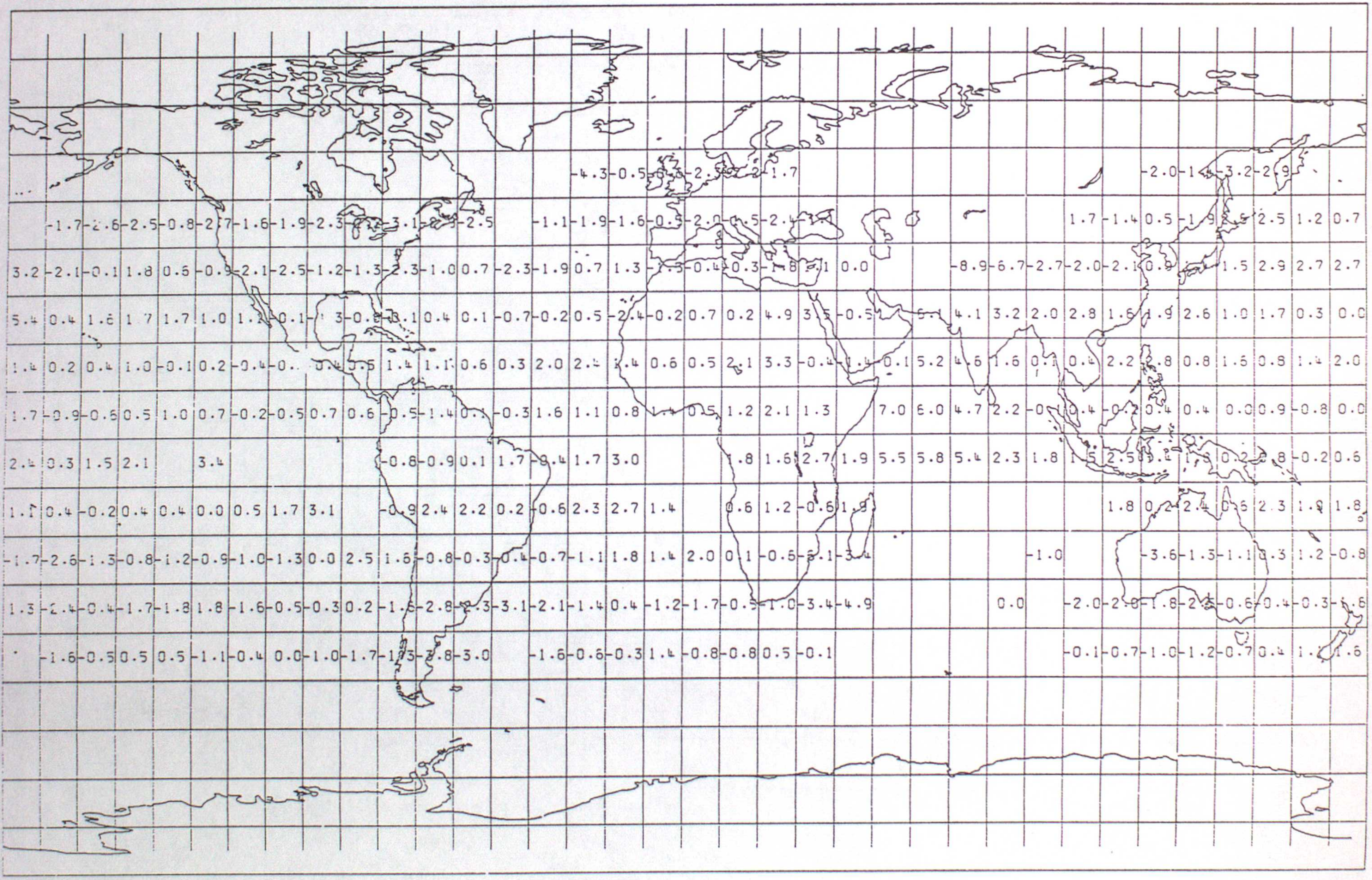

→ REPRESENTS 10 M/S

SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 101-400 HPA
SEPTEMBER 1994
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

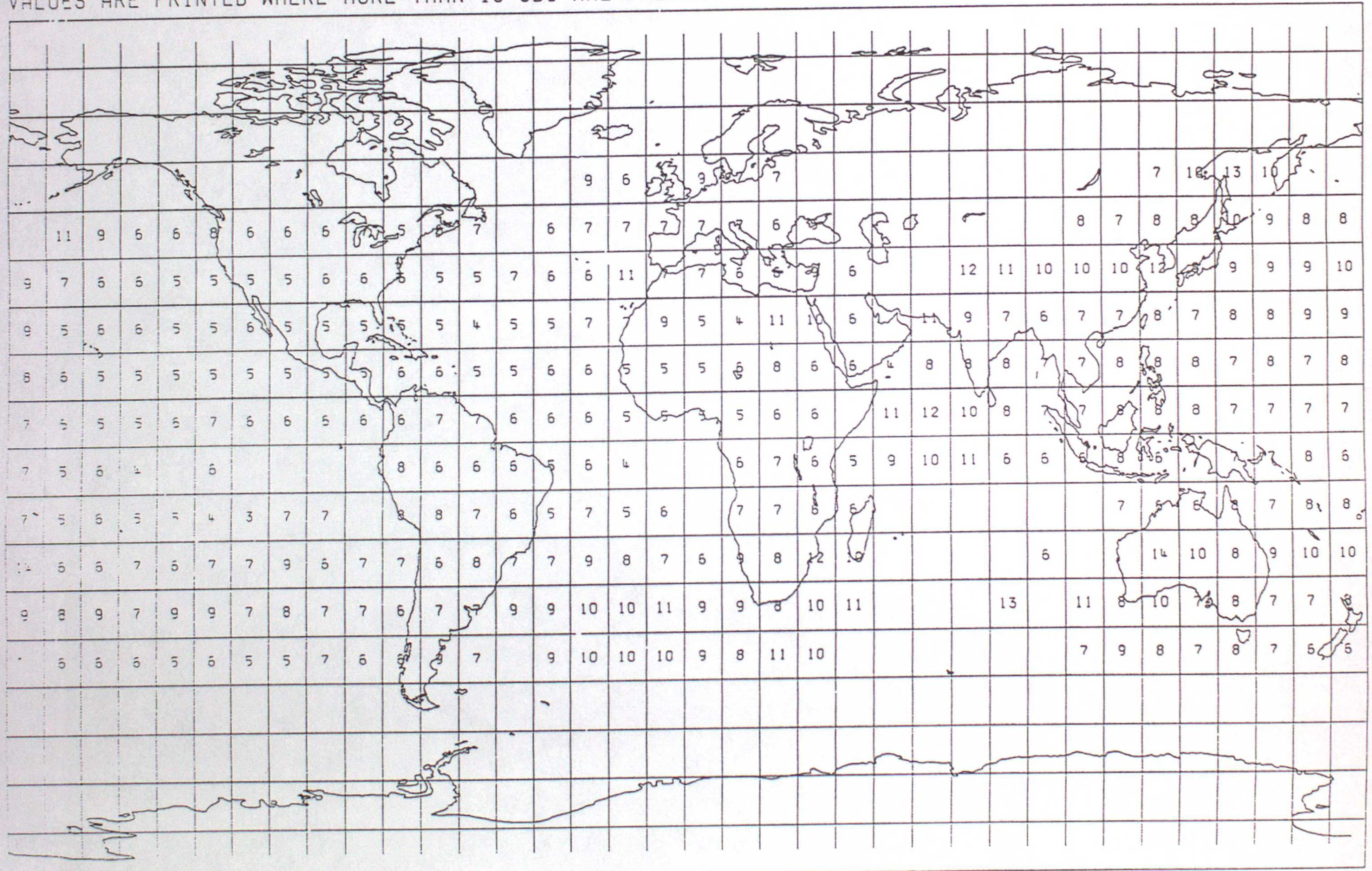
FIGURE 22



SATOBS : MEAN O-B SPEED DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA FIGURE 23
SEPTEMBER 1994
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


-4.3 -0.5 -2.3 1.7 -2.0 -1.4 -3.2 -2.9
-1.7 -2.6 -2.5 -0.8 -2.7 -1.6 -1.9 -2.3 -3.1 -2.5 -1.1 -1.9 -1.6 -0.5 -2.0 -0.5 -2.4 1.7 -1.4 0.5 -1.9 2.5 1.2 0.7
3.2 -2.1 -0.1 1.8 0.5 -0.9 -2.1 -2.5 -1.2 -1.3 -2.3 -1.0 0.7 -2.3 -1.9 0.7 1.3 -0.4 0.3 -1.8 0.0 -8.9 -6.7 -2.7 -2.0 -2.1 0.9 -1.5 2.9 2.7 2.7
5.4 0.4 1.6 1.7 1.7 1.0 1.2 -0.1 3 -0.8 0.4 0.1 -0.7 -0.2 0.5 -2.4 -0.2 0.7 0.2 4.9 3.5 -0.5 4.1 3.2 2.0 2.8 1.6 1.9 2.6 1.0 1.7 0.3 0.0
1.4 0.2 0.4 1.0 -0.1 0.2 -0.4 0.4 0.5 1.4 1.1 0.6 0.3 2.0 2.4 1.4 0.6 0.5 2.1 3.3 -0.4 1.4 -0.1 5.2 4.6 1.6 0.1 0.4 2.2 2.8 0.8 1.5 0.8 1.4 2.0
1.7 -0.9 -0.6 0.5 1.0 0.7 -0.2 -0.5 0.7 0.6 -0.5 -1.4 -0.3 1.6 1.1 0.8 1.4 0.5 1.2 2.1 1.3 7.0 6.0 4.7 2.2 -0.2 0.4 0.4 0.0 0.9 -0.8 0.0
2.4 0.3 1.5 2.1 3.4 -0.8 -0.9 0.1 1.7 -0.4 1.7 3.0 1.8 1.6 2.7 1.9 5.5 5.8 5.4 2.3 1.8 1.5 2.5 0.2 -0.8 -0.2 0.6
1.1 0.4 -0.2 0.4 0.4 0.0 0.5 1.7 3.1 -0.9 2.4 2.2 0.2 -0.6 2.3 2.7 1.4 0.6 1.2 -0.6 1.9 1.8 0.2 -2.4 0.6 2.3 1.9 1.8
-1.7 -2.6 -1.3 -0.8 -1.2 -0.9 -1.0 -1.3 0.0 2.5 1.6 -0.8 -0.3 -0.4 -0.7 -1.1 1.8 1.4 2.0 0.1 -0.6 -3.1 -3.4 -1.0 -3.6 -1.3 -1.1 0.3 1.2 -0.8
1.3 -2.4 -0.4 -1.7 -1.8 1.8 -1.6 -0.5 -0.3 0.2 -1.6 -2.8 -2.3 -3.1 -2.1 -1.4 0.4 -1.2 -1.7 -0.5 -1.0 -3.4 -4.9 0.0 -2.0 -2.0 -1.8 -2.5 -0.6 -0.4 -0.3 -1.6
-1.6 -0.5 0.5 0.5 -1.1 -0.4 0.0 -1.0 -1.7 -1.3 -3.8 -3.0 -1.6 -0.6 -0.3 1.4 -0.8 -0.8 0.5 -0.1 -0.1 -0.7 -1.0 -1.2 -0.7 0.4 1.1 1.6

SATOBS : RMS O-B VECTOR DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA FIGURE 24
SEPTEMBER 1994
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


9 6 9 7 7 10 13 10
11 9 6 6 8 6 6 6 5 7 7 6 7 7 7 7 6 8 7 8 8 10 9 8 8
9 7 6 6 5 5 5 5 6 6 5 5 5 7 6 6 11 7 6 6 12 11 10 10 10 12 9 9 9 10
9 5 6 6 5 5 6 5 5 5 5 5 4 5 5 7 9 5 4 11 10 6 11 9 7 6 7 7 8 7 8 8 9 9
8 6 5 5 5 5 5 5 5 6 6 5 5 6 6 5 5 5 6 8 6 5 4 8 8 8 7 8 8 8 7 8 7 8
7 5 5 5 6 7 6 6 6 6 6 7 7 6 6 6 5 5 5 6 6 11 12 10 8 7 7 8 8 8 7 7 7 7
7 5 6 4 6 8 6 6 6 5 6 4 6 7 6 5 9 10 11 6 6 6 8 6 8 6
7 5 6 5 5 4 3 7 7 8 8 7 6 5 7 5 6 7 7 6 6 7 6 6 8 7 8 8
14 6 6 7 6 7 7 9 6 7 7 6 8 7 7 9 8 7 6 9 8 12 10 6 14 10 8 9 10 10
9 8 9 7 9 9 7 8 7 7 6 7 7 9 9 10 10 11 9 9 8 10 11 13 11 8 10 7 8 7 7 8
6 6 6 5 6 5 5 7 6 6 8 7 9 10 10 10 9 8 11 10 7 9 8 7 8 7 5 5

MONITORING OF SATELLITE TEMPERATURES

MONITORING CENTRE: BRACKNELL

MONTH:September, 94

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from NOAA-11, NOAA-12 500 km.

Standard of comparison :Background field from Bracknell global model.

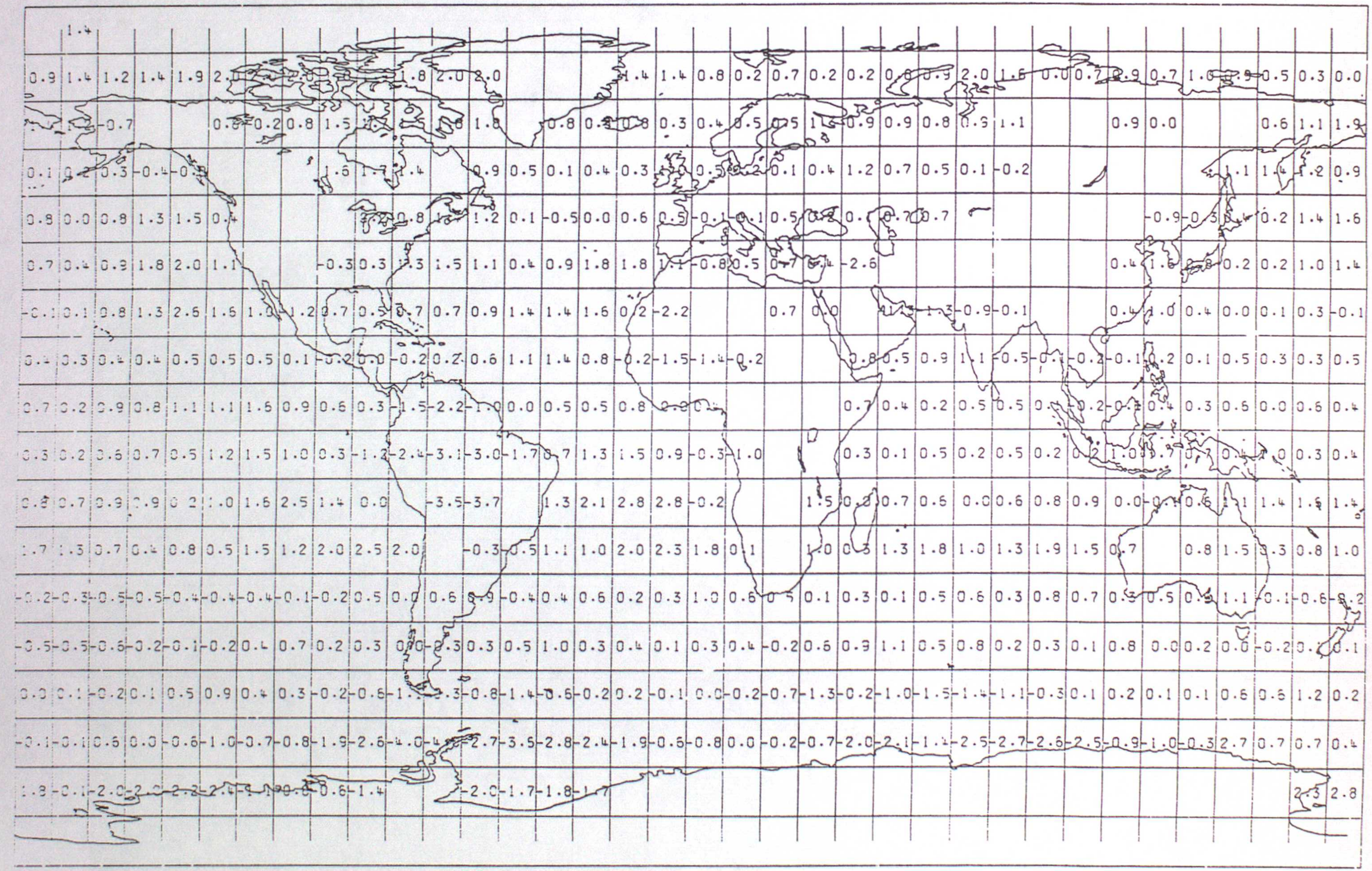
Selection Criteria :All SATEM soundings where number of observations > 30.

Data Extracted :Layer:850 - 1000 hPa
100 - 300 hPa
30 - 50 hPa

:Mean observation minus background temperature differences

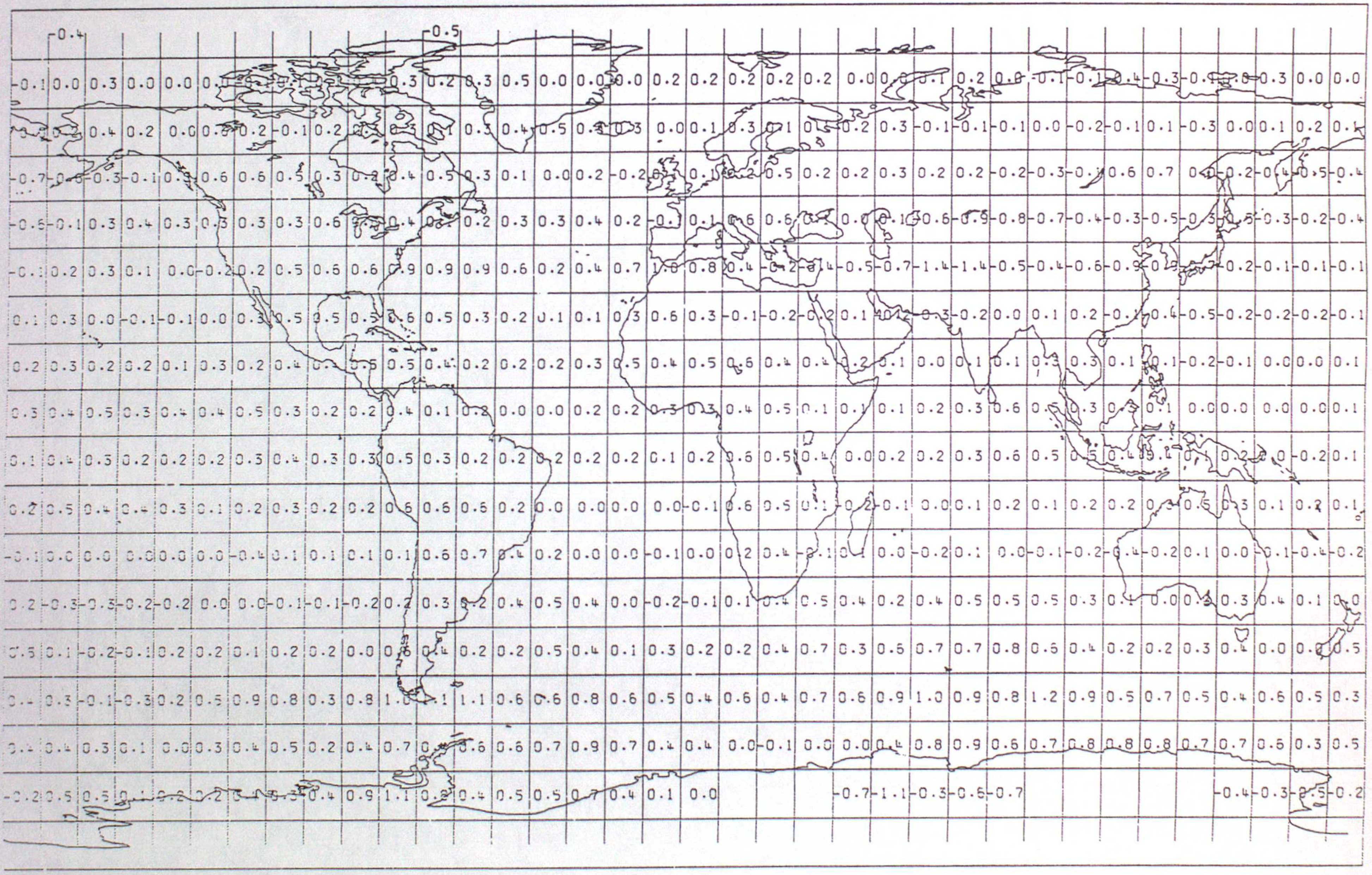
500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 850 TO 1000 HPA
SEPTEMBER 1994
NOAA-11, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 25



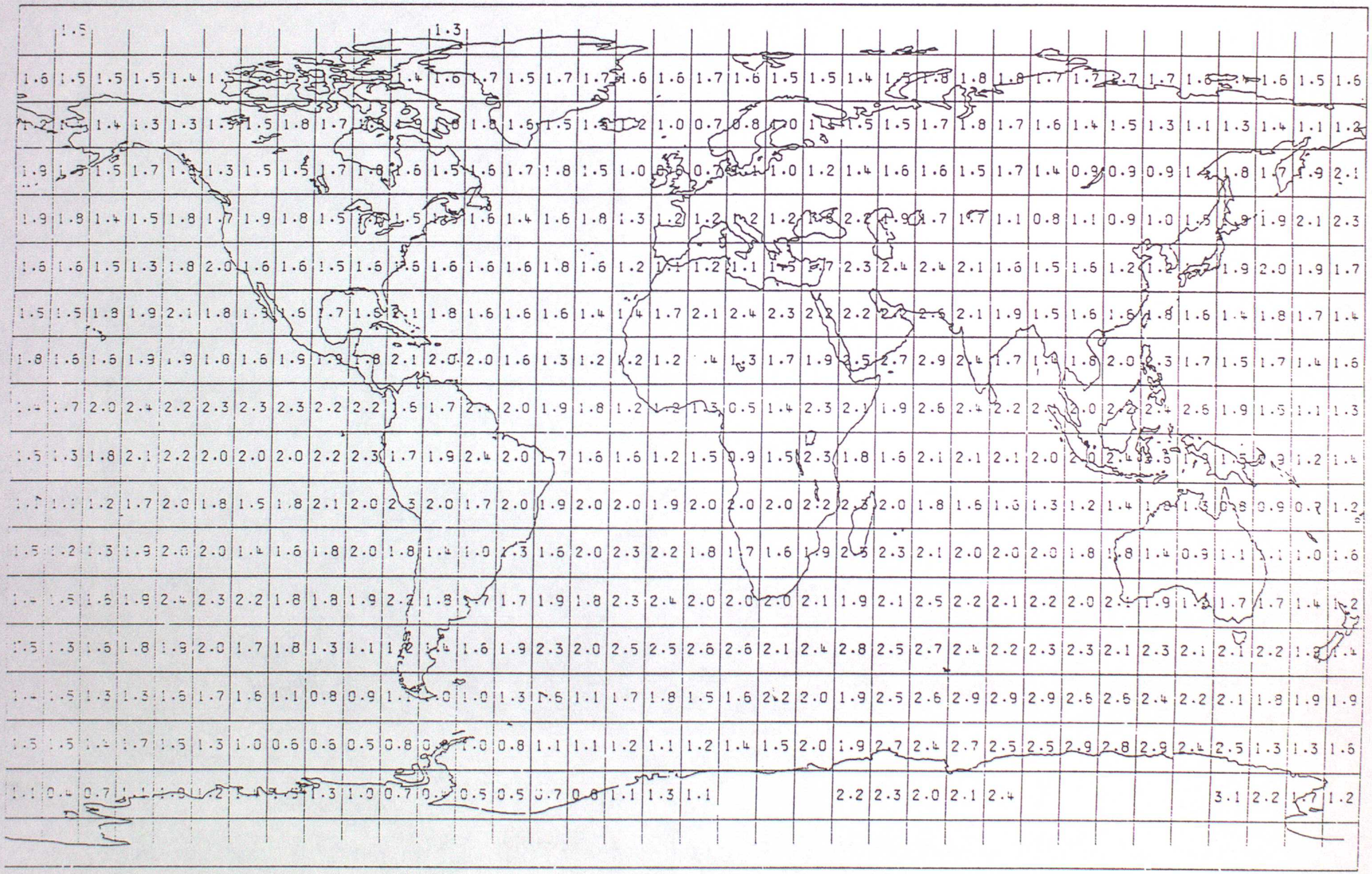
500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 100 TO 300 HPA
SEPTEMBER 1994
NOAA-11, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 26



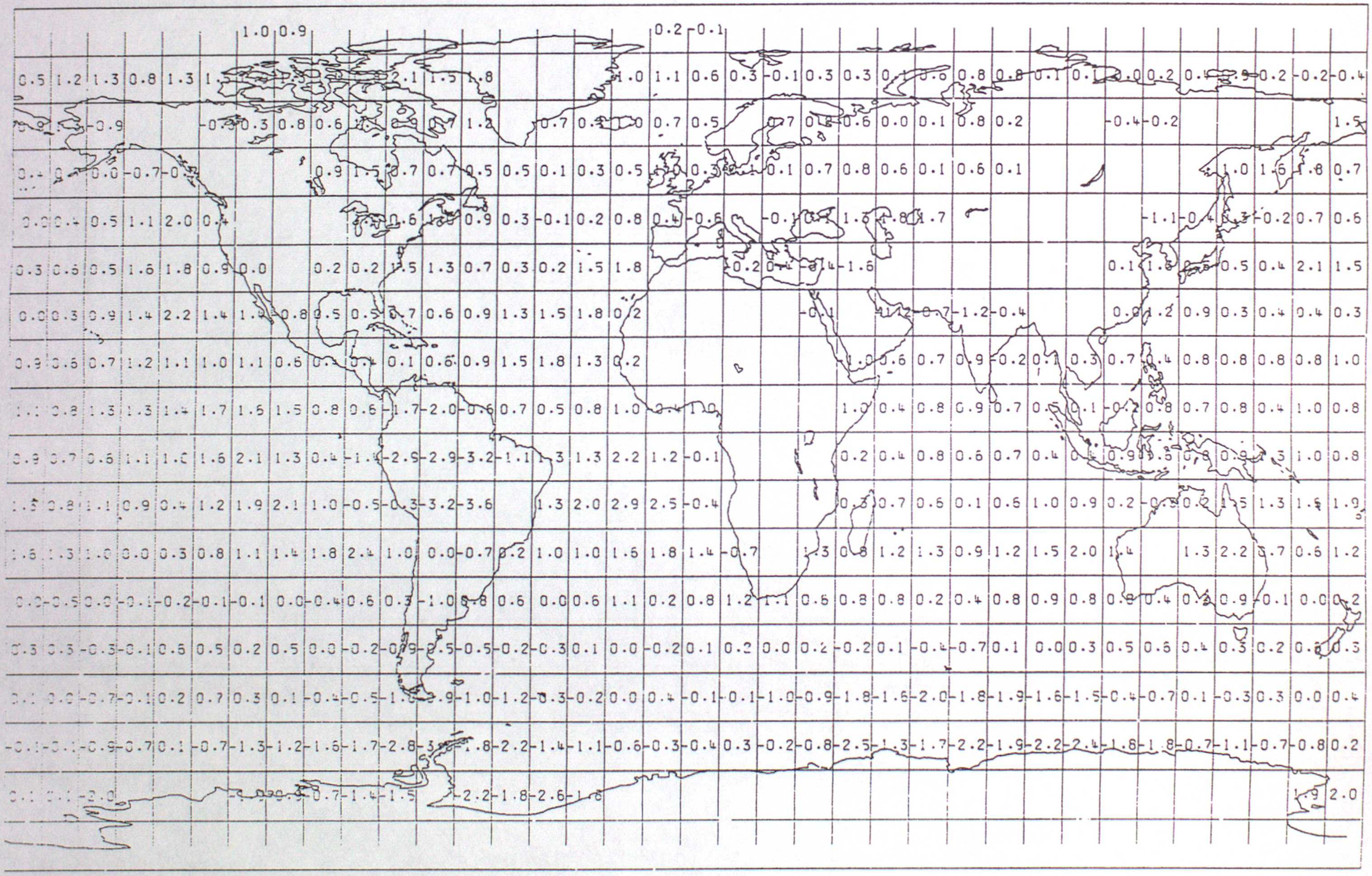
500 KM SPTEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 30 TO 50 HPA
SEPTEMBER 1994
NOAA-11, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 27



500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 850 TO 1000 HPA
SEPTEMBER 1994
NOAA-12, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 28



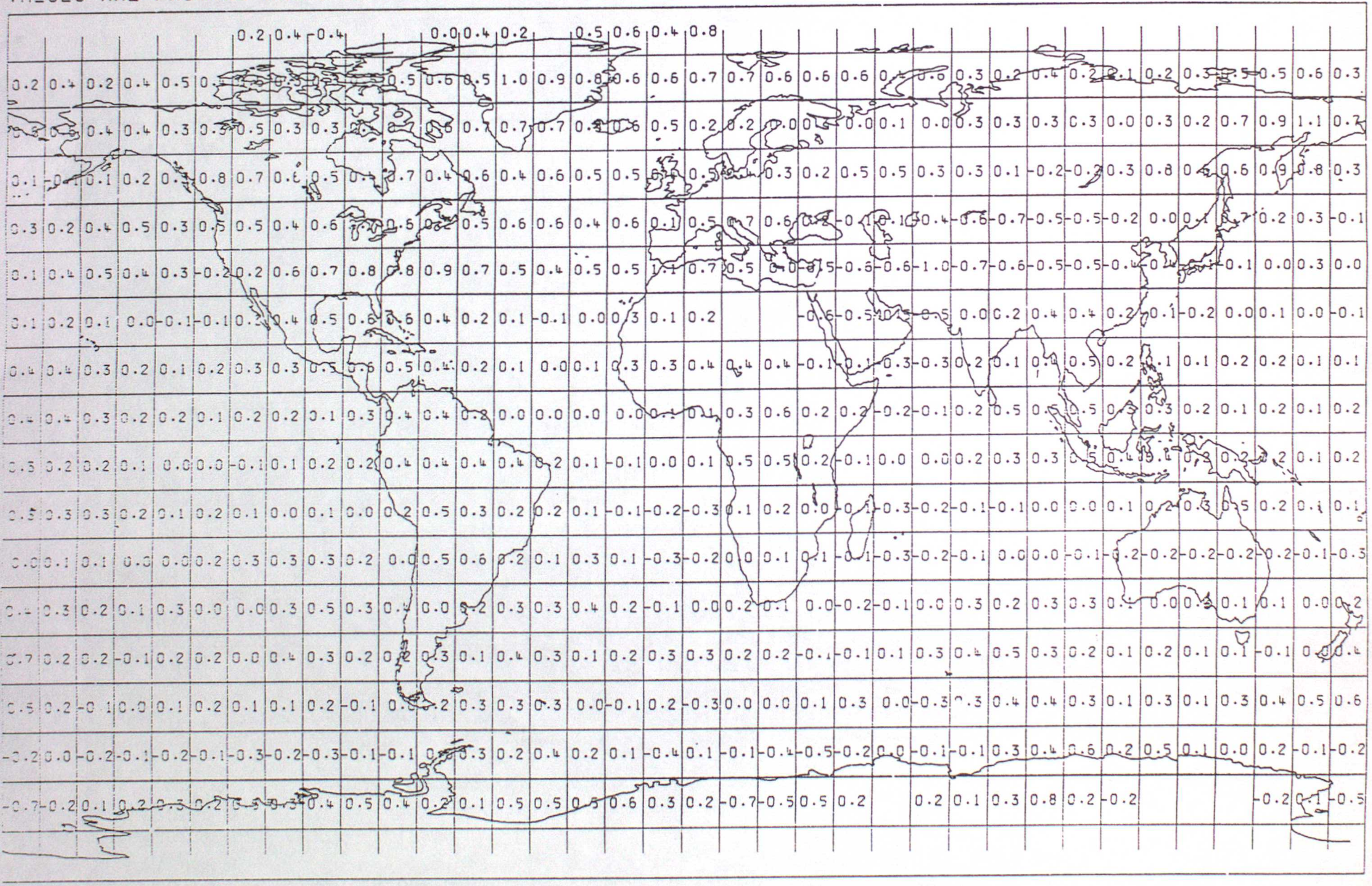
500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 100 TO 300 HPA

SEPTEMBER 1994

NOAA-12, USING ALL OBSERVATIONS

VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 29


0.2 0.4 -0.4 0.0 0.4 0.2 0.5 0.6 0.4 0.8
0.2 0.4 0.2 0.4 0.5 0.5 0.6 0.5 1.0 0.9 0.8 0.6 0.6 0.7 0.7 0.6 0.6 0.6 0.4 0.6 0.3 0.2 0.4 0.2 0.1 0.2 0.3 0.5 -0.5 0.6 0.3
0.4 0.4 0.3 0.3 0.5 0.3 0.3 0.6 0.7 0.7 0.7 0.3 0.6 0.5 0.2 0.2 0.0 0.0 0.1 0.0 0.3 0.3 0.3 0.3 0.0 0.3 0.2 0.7 0.9 1.1 0.7
0.1 -0.1 0.1 0.2 0.3 0.8 0.7 0.6 0.5 0.4 0.7 0.4 0.6 0.4 0.6 0.5 0.5 0.6 0.5 0.4 0.3 0.2 0.5 0.5 0.3 0.3 0.1 -0.2 -0.2 0.3 0.8 0.4 0.6 0.9 0.8 0.3
0.3 0.2 0.4 0.5 0.3 0.5 0.5 0.4 0.6 0.6 0.2 0.5 0.6 0.6 0.4 0.6 0.1 0.5 0.7 0.6 0.2 -0.1 -0.1 -0.4 -0.6 -0.7 -0.5 -0.5 -0.2 0.0 0.1 0.7 0.2 0.3 -0.1
0.1 0.4 0.5 0.4 0.3 -0.2 0.2 0.6 0.7 0.8 0.8 0.9 0.7 0.5 0.4 0.5 0.5 1.1 0.7 0.5 0.0 -0.5 -0.6 -0.6 -1.0 -0.7 -0.6 -0.5 -0.5 -0.4 -0.1 0.0 0.3 0.0
0.1 0.2 0.1 0.0 -0.1 -0.1 0.2 0.4 0.5 0.6 0.6 0.4 0.2 0.1 -0.1 0.0 0.3 0.1 0.2 -0.6 -0.5 -0.5 -0.5 0.0 0.2 0.4 0.4 0.2 -0.1 -0.2 0.0 0.1 0.0 -0.1
0.4 0.4 0.3 0.2 0.1 0.2 0.3 0.3 0.5 0.6 0.5 0.4 0.2 0.1 0.0 0.1 0.3 0.3 0.4 0.4 0.4 -0.1 -0.1 -0.3 -0.3 0.2 0.1 0.4 0.5 0.2 0.1 0.1 0.2 0.2 0.1 0.1
0.4 0.4 0.3 0.2 0.2 0.1 0.2 0.2 0.1 0.3 0.4 0.4 0.2 0.0 0.0 0.0 0.0 0.1 0.1 0.3 0.6 0.2 0.2 -0.2 -0.1 0.2 0.5 0.5 0.5 0.3 0.3 0.2 0.1 0.2 0.1 0.2
0.3 0.2 0.2 0.1 0.0 0.0 -0.1 0.1 0.2 0.2 0.4 0.4 0.4 0.4 0.2 0.1 -0.1 0.0 0.1 0.5 0.5 0.2 -0.1 0.0 0.0 0.2 0.3 0.3 0.5 0.4 0.4 0.3 0.2 0.2 0.1 0.2
0.5 0.3 0.3 0.2 0.1 0.2 0.1 0.0 0.1 0.0 0.2 0.5 0.3 0.2 0.2 0.1 -0.1 -0.2 -0.3 0.1 0.2 0.0 -0.1 -0.3 -0.2 -0.1 -0.1 0.0 0.0 0.1 0.2 0.3 0.5 0.2 0.1 0.1
0.0 0.1 0.1 0.0 0.0 0.2 0.3 0.3 0.3 0.2 0.0 0.5 0.6 0.2 0.1 0.3 0.1 -0.3 -0.2 0.0 0.1 0.1 -0.1 -0.3 -0.2 -0.1 0.0 0.0 -0.1 -0.2 -0.2 -0.2 -0.2 -0.2 -0.1 -0.3
0.4 0.3 0.2 0.1 0.3 0.0 0.0 0.3 0.5 0.3 0.4 0.0 0.2 0.3 0.3 0.4 0.2 -0.1 0.0 0.2 0.1 0.0 -0.2 -0.1 0.0 0.3 0.2 0.3 0.3 0.1 0.0 0.3 0.1 0.1 0.0 0.2
0.7 0.2 0.2 -0.1 0.2 0.2 0.0 0.4 0.3 0.2 0.2 0.3 0.1 0.4 0.3 0.1 0.2 0.3 0.3 0.2 0.2 -0.1 -0.1 0.1 0.3 0.4 0.5 0.3 0.2 0.1 0.2 0.1 0.1 -0.1 0.0 0.4
0.5 0.2 -0.1 0.0 0.1 0.2 0.1 0.1 0.2 -0.1 0.2 0.3 0.3 0.3 0.0 -0.1 0.2 -0.3 0.0 0.0 0.1 0.3 0.0 -0.3 0.3 0.4 0.4 0.3 0.1 0.3 0.1 0.3 0.4 0.5 0.6
-0.2 0.0 -0.2 -0.1 -0.2 -0.1 -0.3 -0.2 -0.3 -0.1 -0.1 0.0 0.3 0.2 0.4 0.2 0.1 -0.4 0.1 -0.1 -0.4 -0.5 -0.2 0.0 -0.1 -0.1 0.3 0.4 0.6 0.2 0.5 0.1 0.0 0.2 -0.1 -0.2
-0.7 -0.2 0.1 0.2 -0.3 0.2 0.3 0.4 0.5 0.4 0.2 0.1 0.5 0.5 0.5 0.6 0.3 0.2 -0.7 -0.5 0.5 0.2 0.2 0.1 0.3 0.8 0.2 -0.2 -0.2 0.1 -0.5

500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 30 TO 50 HPA
SEPTEMBER 1994
NOAA-12, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 30

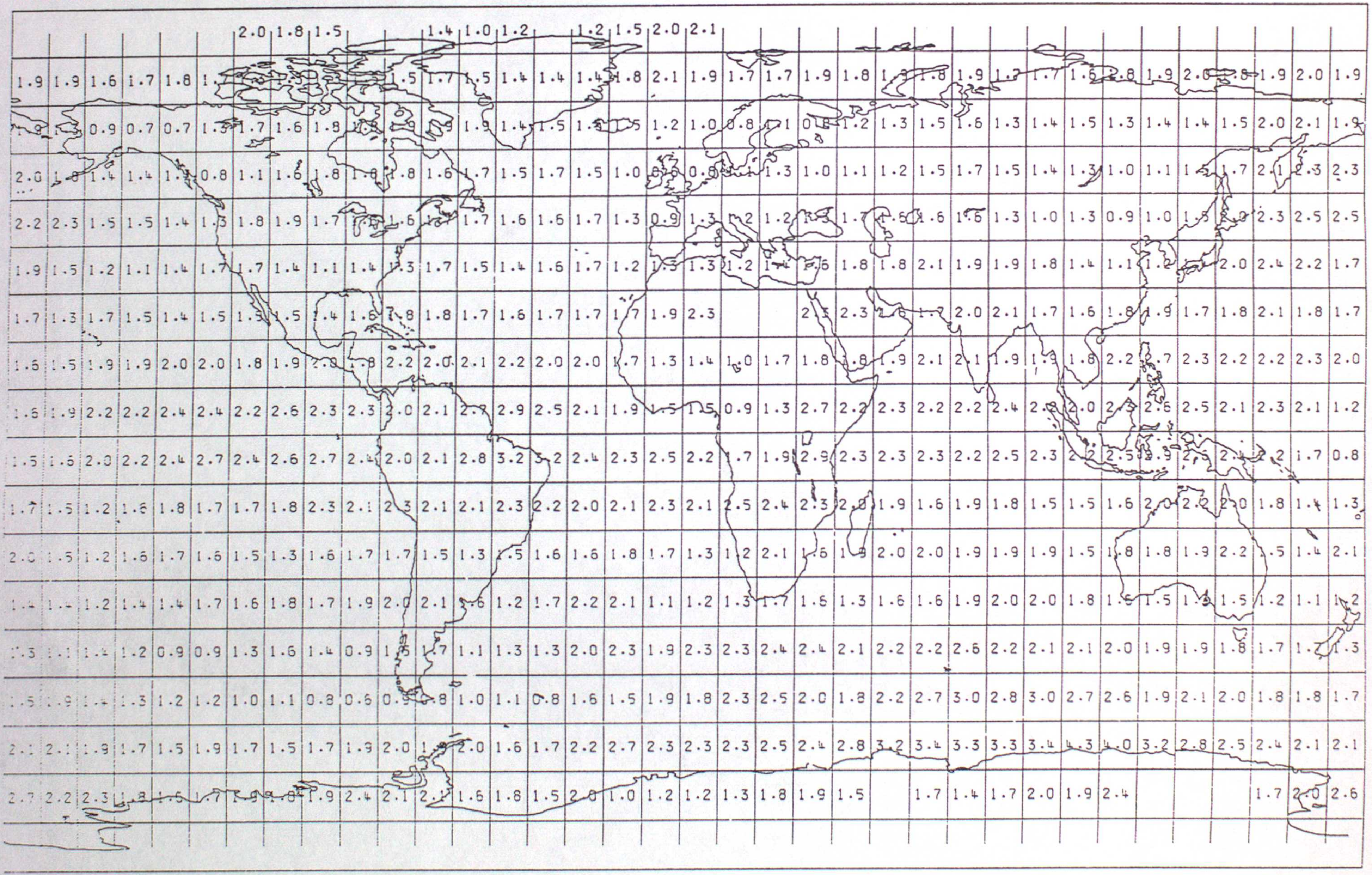


TABLE 8

MONTHLY MONITORING OF MARINE SURFACE OBSERVATIONS (COSNA)
DATA TYPE:- DRIFTER
MONITORING CENTRE: BRACKNELL
MONTH:September, 94

Monitoring procedures
Period :One calendar month.

Data monitored :Reports from each unique identifier for drifting buoy.

Area monitored :10°N - 80°N, 85°W - 0°W

Standard of comparison :Background field from Bracknell global model.

Position :Average latitude and longitude for period.

Observation times :All hours combined.

Elements monitored :Mean sea-level pressure (hPa)
:Wind speed (m s^{-1})
:Wind direction (degrees)

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors.
N.B. A positive bias indicates the observation is veered to the background

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors

GROSS ERROR LIMITS :15 hPa (pressure)
:25 m s^{-1} (Vector Wind)

N.B. Observations of wind direction are only included in the wind direction statistics if the wind speed > 3 m s^{-1}

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE											
13556	25.0	-59.1	ALL	MSLP	SUR	156	0	0	1.2	0.7	1.4
13561	25.9	-40.7	ALL	MSLP	SUR	130	0	0	1.1	0.7	1.3
25553	78.4	0.0	ALL	MSLP	SUR	1	0	0	0.0	-3.7	3.7
25556	74.7	-16.0	ALL	MSLP	SUR	4	0	0	1.2	0.3	1.2
40503	14.4	-74.2	ALL	MSLP	SUR	1	0	0	0.0	-0.3	0.3
40504	16.4	-71.5	ALL	MSLP	SUR	1	0	0	0.0	-0.2	0.2
40604	13.5	-79.9	ALL	MSLP	SUR	1	0	0	0.0	-0.8	0.8
40605	18.8	-66.9	ALL	MSLP	SUR	1	0	0	0.0	0.7	0.7
40802	33.0	-41.6	ALL	MSLP	SUR	2	0	0	0.8	-0.6	1.0
41522	30.6	-70.3	ALL	MSLP	SUR	235	0	0	0.8	0.4	0.9
44617	53.6	-43.2	ALL	MSLP	SUR	209	0	0	0.9	0.6	1.1
44727	56.3	-41.0	ALL	MSLP	SUR	211	0	0	1.0	0.2	1.0
44743	31.6	-48.8	ALL	MSLP	SUR	331	2	1	0.8	0.1	0.8
44761	62.5	-22.1	ALL	MSLP	SUR	1425	2	0	1.3	0.4	1.4
44764	55.9	-37.4	ALL	MSLP	SUR	1288	0	0	1.2	0.2	1.2
44766	64.1	-56.9	ALL	MSLP	SUR	1337	480	36	1.1	-0.2	1.1
44767	62.2	-29.4	ALL	MSLP	SUR	1519	1	0	1.6	0.6	1.7
44768	55.6	-15.3	ALL	MSLP	SUR	1278	1	0	1.0	0.3	1.0
44769	58.9	-24.9	ALL	MSLP	SUR	1436	3	0	1.7	0.4	1.7
44770	62.0	-35.4	ALL	MSLP	SUR	1279	2	0	1.6	-0.1	1.6
44771	59.0	-10.5	ALL	MSLP	SUR	1232	0	0	2.1	0.8	2.2
44774	53.0	-20.4	ALL	MSLP	SUR	1207	4	0	1.2	0.3	1.2
44775	52.1	-42.1	ALL	MSLP	SUR	1105	2	0	1.6	0.1	1.6
44776	54.7	-35.5	ALL	MSLP	SUR	1301	1	0	1.5	0.2	1.5
62501	47.7	-7.3	ALL	MSLP	SUR	390	0	0	1.3	-0.5	1.3
62502	44.0	-2.4	ALL	MSLP	SUR	126	0	0	1.5	0.2	1.5
62507	48.5	-11.8	ALL	MSLP	SUR	275	0	0	1.1	0.5	1.2
62508	45.4	-17.8	ALL	MSLP	SUR	50	0	0	2.4	-2.0	3.1
62509	47.4	-17.9	ALL	MSLP	SUR	62	0	0	0.6	0.6	0.8
62510	47.0	-16.8	ALL	MSLP	SUR	80	0	0	0.7	0.3	0.8
62511	45.9	-17.7	ALL	MSLP	SUR	71	0	0	0.8	0.8	1.1
62512	47.6	-17.4	ALL	MSLP	SUR	55	0	0	0.6	0.7	0.9
62513	48.5	-17.8	ALL	MSLP	SUR	56	0	0	0.6	0.7	0.9
62514	39.3	-15.3	ALL	MSLP	SUR	168	0	0	0.9	-0.7	1.1
62524	29.4	-26.4	ALL	MSLP	SUR	648	0	0	1.5	-0.2	1.6
62674	62.4	-29.4	ALL	MSLP	SUR	263	3	1	1.6	-1.1	2.0
62675	58.9	-17.8	ALL	MSLP	SUR	403	0	0	1.3	-1.3	1.8
62696	62.9	-4.9	ALL	MSLP	SUR	1277	0	0	1.1	0.3	1.2
62721	57.5	-16.0	ALL	MSLP	SUR	364	0	0	2.0	0.4	2.1
64528	63.8	-28.6	ALL	MSLP	SUR	1222	0	0	1.8	-0.1	1.8
64544	64.0	-31.9	ALL	MSLP	SUR	471	0	0	1.3	0.5	1.4
65571	60.4	-36.0	ALL	MSLP	SUR	511	0	0	1.9	-0.4	1.9
65592	58.6	-40.5	ALL	MSLP	SUR	1108	22	2	1.6	-0.3	1.6
WIND SPEED											
13556	25.0	-59.1	ALL	SPEED	SUR	425	0	0	1.1	-1.4	1.7
40503	14.4	-74.2	ALL	SPEED	SUR	1	0	0	0.0	-1.7	1.7
40504	16.4	-71.5	ALL	SPEED	SUR	1	0	0	0.0	3.6	3.6
40604	13.5	-79.9	ALL	SPEED	SUR	1	0	0	0.0	4.8	4.8
40605	18.8	-66.9	ALL	SPEED	SUR	1	0	0	0.0	1.3	1.3
40802	33.0	-41.6	ALL	SPEED	SUR	2	0	0	1.2	0.5	1.3
44617	53.6	-43.2	ALL	SPEED	SUR	189	0	0	1.5	-0.2	1.5
44727	56.3	-41.0	ALL	SPEED	SUR	192	0	0	1.7	-1.0	2.0
44764	55.9	-37.4	ALL	SPEED	SUR	876	3	0	1.9	0.3	1.9
44776	54.7	-35.5	ALL	SPEED	SUR	883	1	0	2.0	-0.3	2.0
62508	45.4	-17.8	ALL	SPEED	SUR	44	0	0	2.1	7.5	7.8
62509	47.4	-17.9	ALL	SPEED	SUR	53	0	0	2.5	6.6	7.1
64544	64.0	-31.9	ALL	SPEED	SUR	459	0	0	3.2	-4.5	5.5

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
WIND DIRECTION											
13556	25.0	-59.1	ALL	DIRN.	SUR	67	0	0	15.9	8.9	18.3
40503	14.4	-74.2	ALL	DIRN.	SUR	1	0	0	0.0	3.3	3.3
40504	16.4	-71.5	ALL	DIRN.	SUR	1	0	0	0.0	-21.8	21.8
40604	13.5	-79.9	ALL	DIRN.	SUR	1	0	0	0.0	-17.2	17.2
40605	18.8	-66.9	ALL	DIRN.	SUR	1	0	0	0.0	-10.0	10.0
40802	33.0	-41.6	ALL	DIRN.	SUR	1	0	0	0.0	15.7	15.7
44617	53.6	-43.2	ALL	DIRN.	SUR	98	0	0	29.8	-7.7	30.8
44727	56.3	-41.0	ALL	DIRN.	SUR	163	0	0	16.4	4.7	17.1
44764	55.9	-37.4	ALL	DIRN.	SUR	731	3	0	25.7	6.2	26.5
44776	54.7	-35.5	ALL	DIRN.	SUR	665	1	0	51.8	10.4	52.8
62508	45.4	-17.8	ALL	DIRN.	SUR	42	0	0	8.7	-5.2	10.1
62509	47.4	-17.9	ALL	DIRN.	SUR	51	0	0	14.0	10.0	17.2
64544	64.0	-31.9	ALL	DIRN.	SUR	326	0	0	88.1	6.5	88.3

TABLE 9

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:September, 94

Monitoring procedures:

Period :One calendar month.

Data monitored :Statistics for each airline carrier.

Area monitored :40°N - 70°N, 60°W - 0°W.

Standard of comparison :Background field from Bracknell global model.

Observation times :All hours combined.

Level(s) monitored :300.0 - 150.0 hPa

Elements monitored :TEMP in °C ; WIND in m s^{-1}

Parameters monitored :N REP. :Number of observations received excluding duplicates.

:PG :Percentage of observations with gross errors.

:PR :Percentage of observations rejected by quality control including rejections from the duplicate check.

:PC :Percentage of observations with calm winds.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.

:BIAS :Mean difference of observations from background values excluding those with gross errors in Temperature & vector wind.

GROSS ERROR LIMITS :10.0 °C ; 60 m s^{-1} Vector Wind

SELECTION CRITERIA :N REP $\geq$ 20

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AAL	2034	0	2	1.8	-0.2	2040	0	2	0	7.8	1.3
AAN	75	3	9	1.6	0.0	71	0	6	0	8.8	-0.5
ACA	869	0	1	2.1	0.1	896	0	1	0	7.3	0.7
AEA	119	1	4	1.9	0.3	119	0	5	0	10.5	-0.2
AEL	200	3	9	2.3	-0.1	201	0	7	0	9.0	-0.1
AFL	94	9	100	4.4	2.8	94	0	100	2	15.6	0.9
AFR	589	1	6	2.0	-0.2	596	0	7	0	7.5	0.9
AIC	55	0	0	2.5	0.7	57	0	0	0	8.9	0.2
AMT	41	0	2	2.2	0.9	45	0	7	0	11.3	1.6
AMX	140	2	100	2.8	-0.4	142	0	4	0	9.0	-0.2
ANZ	170	0	2	2.0	-1.0	171	0	4	1	8.1	1.6
AOM	226	0	2	1.6	0.7	229	0	2	0	8.5	-0.1
ATN	195	1	4	2.7	-2.2	199	0	100	0	14.1	1.8
AUA	52	0	0	1.9	-1.2	52	0	2	0	7.2	0.5
AVA	99	1	0	1.6	-0.3	100	0	4	0	10.4	0.3
AZA	336	0	3	1.7	0.2	339	0	2	0	8.4	0.9
BAL	188	0	20	1.6	-0.4	192	0	20	0	7.9	0.6
BAW	1356	1	4	1.9	-0.2	1377	0	4	0	7.8	1.4
BBB	49	0	24	1.5	-0.4	50	0	24	0	6.4	0.0
BWA	91	1	0	1.8	1.2	92	1	1	0	7.8	0.8
CDN	611	0	3	2.0	0.2	612	0	5	1	7.7	1.4
CFC	39	3	15	3.0	1.4	40	0	10	0	7.6	0.9
CFG	348	0	2	1.9	-0.9	349	0	4	1	9.6	-0.4
CKS	27	4	26	3.9	-1.0	30	0	100	0	19.0	7.1
CKT	30	3	7	1.5	0.0	32	0	3	0	6.5	0.6
CLI	207	0	1	2.1	-0.1	207	0	0	0	6.7	0.7
CLX	74	0	1	2.3	-0.8	78	0	0	0	9.0	1.0
CMM	252	1	2	2.0	-0.2	253	0	2	0	8.6	1.8
COA	360	0	4	1.7	0.4	363	0	5	1	7.5	1.3
CRL	91	0	1	1.6	-0.1	101	0	1	0	8.0	0.9
CTM	42	0	24	2.4	-1.5	42	0	24	0	7.0	2.4
CUB	73	0	14	2.5	0.8	73	1	10	0	10.5	0.8
DAL	2134	0	2	2.0	0.1	2173	0	2	0	8.1	1.1
DHL	198	2	100	3.8	-2.3	196	1	100	0	9.9	0.8
DLH	1695	0	5	1.8	-0.2	1734	0	7	2	7.5	1.0
DOA	109	1	19	1.7	-0.5	109	0	19	0	8.3	0.0
EIA	24	4	8	2.1	-0.4	25	0	24	0	10.6	3.9
ELY	100	0	9	1.9	-0.6	104	0	11	0	8.2	2.2
EWW	27	0	0	4.0	1.7	27	0	11	0	12.9	2.0
FDX	363	1	2	2.1	0.7	365	0	3	0	8.6	1.0
FIN	403	0	2	2.1	0.2	406	0	4	1	9.1	1.1
GAF	112	0	1	1.8	-0.1	111	0	1	1	7.3	1.6
GFA	22	0	0	2.1	-0.2	26	0	4	0	7.8	1.0
HLF	80	3	3	1.6	-0.7	80	0	0	0	8.7	0.2
IBE	883	0	18	1.9	-0.4	890	0	18	0	8.2	0.4
ICE	414	1	2	1.8	-0.2	412	0	2	0	7.5	1.5
JAL	28	0	0	1.8	0.9	28	0	4	0	10.0	-0.4
KLM	1357	0	2	1.8	0.3	1365	0	2	0	7.9	1.2
LDA	177	1	15	2.0	-1.1	178	1	15	0	8.3	0.3
LDI	101	3	3	1.8	-0.9	102	0	4	0	8.5	-0.4
LIB	76	1	3	1.4	0.1	76	0	4	0	7.6	-0.9
LOT	470	0	2	2.3	0.3	474	0	2	0	7.9	0.4
LTU	385	0	3	1.8	0.3	380	0	4	1	8.1	0.4
LWD	20	0	5	2.2	0.8	20	0	5	0	8.9	-0.2
MKD	69	0	4	2.4	0.0	72	0	10	0	11.7	-0.9
MOD	23	0	17	1.9	-0.8	25	0	16	0	14.6	1.5
MPH	432	0	1	1.6	-0.3	431	0	1	0	7.5	1.3
NWA	2614	1	2	2.0	0.5	2656	0	3	1	7.9	1.0
PIA	30	0	0	1.7	0.7	31	0	6	0	13.3	-1.2

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
RAF	28	0	0	1.3	0.4	28	0	0	0	6.3	2.7
RJA	35	6	6	1.8	0.7	36	0	6	0	9.1	0.7
ROY	51	2	4	2.6	1.2	51	0	4	0	8.5	1.3
RRR	221	2	24	2.3	-0.4	221	0	100	2	9.0	2.3
SAB	32	0	0	1.8	0.1	33	0	0	0	6.5	1.4
SAS	1142	0	1	1.9	-0.3	1150	0	2	1	8.4	0.8
SIA	64	0	6	2.5	-0.5	64	0	9	0	11.0	0.6
SPP	151	1	3	1.7	-0.2	151	0	4	1	8.1	1.3
SVA	186	1	5	2.0	0.1	195	0	5	1	8.9	0.5
SWR	121	0	1	1.7	-0.1	125	1	2	0	8.7	1.5
TAP	368	0	4	1.9	-0.1	373	0	5	0	8.9	0.5
TEJ	22	5	14	1.6	-0.6	22	0	18	0	11.3	-0.3
TIH	107	1	4	1.6	-0.1	109	0	3	1	7.7	1.3
TOW	80	1	3	2.0	-0.1	81	0	69	0	9.0	0.5
TSC	215	0	1	2.0	-0.4	218	0	4	0	8.8	0.9
TWA	1036	1	3	2.1	0.1	1032	0	3	0	8.3	1.4
UAL	2091	1	5	2.4	-0.5	2108	0	5	3	8.6	0.8
ULE	52	0	8	1.7	0.0	55	0	7	0	9.1	0.7
UPS	260	0	17	1.8	-0.2	263	0	17	0	8.4	1.5
USA	74	0	4	2.0	-0.3	75	0	3	0	6.6	0.5
VIA	103	0	4	1.5	0.6	104	0	5	0	7.3	0.3
VIR	113	1	2	2.0	-0.1	120	0	1	0	6.8	1.6
WOA	24	0	8	2.6	0.1	25	0	4	0	8.7	3.9
BA	9456	0	7	1.5	0.4	9454	0	7	0	7.4	1.5
M	118	3	10	3.2	1.2	125	0	6	0	11.9	1.3
N	285	1	5	2.9	0.8	295	0	3	0	9.3	0.8

TABLE 10

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:September, 94

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.
GROSS ERROR LIMITS	:Defined in Appendix I.1	

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
BDDH	00	Z	100	1	0	0.0	23.0	-23.0
DBBH	00	Z	100	9	0	21.2	23.8	10.7
DBBH	12	Z	100	8	0	22.0	24.5	10.9
DBLK	00	Z	100	1	0	0.0	15.0	15.0
DBLK	12	Z	100	18	0	19.5	44.8	40.3
EHOA	00	Z	100	1	0	0.0	42.0	42.0
EHOA	12	Z	100	1	0	0.0	3.0	-3.0
F/OU	00	Z	100	1	0	0.0	1.0	1.0
FNOR	00	Z	100	10	0	13.6	16.0	8.5
FNOR	12	Z	100	8	0	15.4	16.9	-7.1
FNOU	00	Z	100	5	0	12.1	16.7	11.6
FNOU	12	Z	100	4	0	10.2	10.2	0.3
FNPH	00	Z	100	10	0	13.2	13.3	-1.1
FNPH	12	Z	100	10	0	15.6	18.9	-10.6
FNRS	00	Z	100	15	0	14.7	17.2	8.9
FNRS	12	Z	100	13	0	26.7	28.5	-10.2
GACA	00	Z	100	28	0	13.5	17.1	10.5
GACA	12	Z	100	27	0	17.9	20.0	8.9
JBOA	00	Z	100	1	0	0.0	20.0	20.0
LDWR	00	Z	100	28	0	14.8	16.4	7.2
LDWR	12	Z	100	29	0	13.6	15.1	6.5
OXYL	00	Z	100	20	0	16.7	28.5	23.1
OXYL	12	Z	100	15	0	22.1	36.3	28.7
OZJP	00	Z	100	17	1	16.6	20.2	11.5
OZJP	12	Z	100	18	0	20.5	31.2	23.5
SHIPAA	12	Z	100	1	0	0.0	20.0	20.0
SHIPS	00	Z	100	3	0	5.2	5.7	2.3
SHIPS	12	Z	100	5	0	6.6	23.2	22.2
V2LV	00	Z	100	25	0	21.6	24.9	12.4
V2LV	12	Z	100	24	0	22.6	26.3	13.5
V2LX	00	Z	100	25	0	24.6	26.0	8.4
V2LX	12	Z	100	25	0	23.2	26.8	13.3
0FNRS	00	Z	100	1	0	0.0	18.0	18.0
03953	00	Z	100	29	0	13.7	30.1	26.8
03953	12	Z	100	29	0	13.2	29.1	26.0
04018	00	Z	100	30	0	20.0	28.8	20.8
04018	12	Z	100	29	0	18.8	40.5	35.9
04220	00	Z	100	30	0	15.4	24.3	18.8
04220	12	Z	100	30	0	12.8	27.4	24.2
04270	00	Z	100	27	0	19.5	25.1	15.9
04270	12	Z	100	29	0	15.9	24.2	18.3
04339	00	Z	100	30	0	19.0	27.0	19.1
04339	12	Z	100	30	0	18.6	32.6	26.8
04360	00	Z	100	29	0	14.4	22.7	17.6
04360	12	Z	100	29	0	18.1	30.4	24.4
08001	00	Z	100	27	0	17.0	24.3	17.4
08001	12	Z	100	24	0	20.0	20.8	6.0
08508	00	Z	100	21	0	13.5	14.8	6.1
08508	12	Z	100	19	0	41.9	42.1	4.2
08594	00	Z	100	22	0	43.6	45.4	12.6
08594	12	Z	100	18	1	20.3	21.3	-6.6
60020	00	Z	100	27	0	16.3	16.4	1.9
60020	12	Z	100	29	0	17.9	18.0	1.3
71600	00	Z	100	29	0	19.7	20.3	5.0
71600	12	Z	100	29	0	19.4	38.9	33.7
72201	00	Z	100	25	0	21.1	22.8	8.5
72201	12	Z	100	28	0	19.8	34.4	28.1
72402	00	Z	100	26	0	36.1	52.0	37.4
72402	12	Z	100	28	0	17.9	55.3	52.4
72606	00	Z	100	21	0	38.6	38.7	1.0

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
72606	12	Z	100	20	0	17.4	25.0	17.9
74494	00	Z	100	24	0	16.9	19.9	-10.6
74494	12	Z	100	26	0	24.2	31.0	19.4

TABLE 11

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:September, 94

Monitoring procedures:

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:500 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.1

```
 WMO   OBS                NUM    NUM
IDENT  TIME  ELM   LEV    OBS   GROSS      SD      RMS      BIAS

BDDH    00    Z    500     1      0        0.0      3.0      3.0
DBBH    00    Z    500     9      0        9.2     14.1     10.7
DBBH    12    Z    500     7      0       23.6     23.7     -2.6
DBLK    00    Z    500     1      0        0.0      7.0     -7.0
DBLK    12    Z    500    18      0       11.5     14.8      9.3

EHOA    00    Z    500     1      0        0.0      2.0     -2.0
EHOA    12    Z    500     1      0        0.0      6.0     -6.0
F/OU    00    Z    500     1      0        0.0      4.0     -4.0
FNOR    00    Z    500    11      0        8.6     10.0      5.1
FNOR    12    Z    500     9      0        9.4     10.0     -3.4

FNOU    00    Z    500     5      0        9.7     12.5      8.0
FNOU    12    Z    500     4      0        9.3     10.0     -3.5
FNPH    00    Z    500    13      0       12.1     12.1      1.2
FNPH    12    Z    500    10      0        7.8      7.9      0.8
FNRS    00    Z    500    18      0       12.6     12.6     -0.4

FNRS    12    Z    500    16      0       11.2     12.1     -4.6
GACA    00    Z    500    28      0       11.9     13.3      6.0
GACA    12    Z    500    27      0       11.5     13.3      6.7
JBOA    00    Z    500     1      0        0.0      3.0      3.0
LDWR    00    Z    500    28      0       11.7     15.0      9.4

LDWR    12    Z    500    28      0       11.6     11.6      1.2
OXYL    00    Z    500    20      0       23.0     23.7      5.8
OXYL    12    Z    500    15      0       18.2     20.3      8.9
OZJP    00    Z    500    19      0       25.2     26.8      9.2
OZJP    12    Z    500    18      0       17.7     18.3      4.5

SHIPA   00    Z    500     1      0        0.0     11.0     11.0
SHIPAA  00    Z    500     1      0        0.0     22.0     22.0
SHIPAA  12    Z    500     2      0        2.0     10.2     10.0
SHIPS   00    Z    500    12      0       25.4     33.7     22.2
SHIPS   12    Z    500     8      0       12.1     16.0     10.4

V2LV    00    Z    500    27      0       14.9     16.4      6.7
V2LV    12    Z    500    25      0       12.9     13.6      4.4
V2LX    00    Z    500    25      0       17.6     17.6      0.3
V2LX    12    Z    500    26      0       14.9     14.9      0.0
0FNRS   00    Z    500     1      0        0.0      8.0     -8.0

03953   00    Z    500    30      0        8.8     11.9      8.0
03953   12    Z    500    30      0        9.7     12.7      8.1
04018   00    Z    500    30      0       13.0     17.4     11.6
04018   12    Z    500    30      0       12.5     20.1     15.8
04220   00    Z    500    30      0       13.9     13.9      0.3

04220   12    Z    500    30      0       15.2     15.3      1.8
04270   00    Z    500    30      0       16.3     17.0      4.6
04270   12    Z    500    29      0       17.7     20.3      9.8
04339   00    Z    500    30      0       13.0     15.5      8.3
04339   12    Z    500    30      0       13.0     13.1      0.7

04360   00    Z    500    29      0       15.9     15.9     -1.1
04360   12    Z    500    30      0       10.4     10.6      2.4
08001   00    Z    500    27      0       14.7     18.6     11.3
08001   12    Z    500    26      0       11.2     11.3      1.8
08508   00    Z    500    25      0        7.8     12.6      9.8

08508   12    Z    500    18      0       10.9     11.4      3.3
08594   00    Z    500    23      0        7.6     14.7     12.5
08594   12    Z    500    22      0        9.5     12.9      8.7
60020   00    Z    500    27      0        9.9     19.6     16.9
60020   12    Z    500    29      0       12.9     16.1      9.7

71600   00    Z    500    28      0       10.0     10.0     -0.6
71600   12    Z    500    30      0       12.0     12.6      3.8
72201   00    Z    500    30      0        7.2      8.3      4.1
72201   12    Z    500    29      0        8.0     13.2     10.4
72402   00    Z    500    30      0        9.0     11.9      7.8
```

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
72402	12	Z	500	30	0	8.5	15.8	13.3
72606	00	Z	500	21	0	8.9	10.6	-5.9
72606	12	Z	500	21	0	7.1	7.1	0.5
74494	00	Z	500	27	0	10.3	11.1	-4.0
74494	12	Z	500	27	0	10.7	10.7	-0.3

TABLE 12

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:September, 94

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:VECTOR WIND in m s^{-1}
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:UBIAS,VBIAS	:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.2

```
 WMO   OBS                  NUM     NUM      %
IDENT  TIME  ELM   LEV     OBS    GROSS    REJ     RMS    UBIAS   VBIAS

BDDH    00    V    100       1       0       0     0.0    -2.8     3.9
DBBH    00    V    100       7       0       0     0.0     0.8    -0.6
DBBH    12    V    100       9       0       0     0.0    -1.0     1.3
DBLK    00    V    100       1       0       0     0.0     4.2    -4.3
DBLK    12    V    100      18       0       0     0.0    -0.6    -2.4

EHOA    00    V    100       1       0       0     2.4    -0.1     0.8
EHOA    12    V    100       1       0       0     2.4    -2.0     2.0
F/OU    00    V    100       1       0       0     2.4    -3.9    -2.1
FNOR    00    V    100      10       0       0     2.4     0.0     0.2
FNOR    12    V    100       8       0       0     0.8    -0.3    -0.9

FNOU    00    V    100       5       0       0     0.8     1.3    -0.6
FNOU    12    V    100       4       0       0     0.8    -1.3     0.2
FNPH    00    V    100      11       0       0     0.8     0.0     1.3
FNPH    12    V    100      11       0       0     2.5    -0.8    -0.2
FNRS    00    V    100      15       0       0     2.3     0.9    -0.7

FNRS    12    V    100      13       0       0     3.5    -1.5     0.4
GACA    00    V    100      28       0       0     4.6    -0.3    -0.9
GACA    12    V    100      28       0       0     2.3    -1.3    -1.0
JBOA    00    V    100       1       0       0     2.9    -0.6    -0.8
LDWR    00    V    100      28       0       0     5.3    -0.4     0.0

LDWR    12    V    100      29       0       0     2.2    -0.1    -0.5
OXYL    00    V    100      19       0       0     2.4    -0.1    -0.8
OXYL    12    V    100      15       0       0     1.7    -1.1    -1.3
OZJP    00    V    100      18       0       0     2.2     0.6    -1.4
OZJP    12    V    100      18       0       0     2.3    -0.8    -1.4

SHIPAA  12    V    100       1       0       0     3.5    -1.0    -3.6
SHIPS   00    V    100       3       0       0     3.5    -2.7     2.3
SHIPS   12    V    100       5       0       0     3.5    -1.2     0.2
V2LV    00    V    100      25       0       0     3.5     0.8     0.7
V2LV    12    V    100      24       0       0     3.9    -0.9     2.5

V2LX    00    V    100      25       0       0     4.6     2.0     0.3
V2LX    12    V    100      25       0       0     3.0    -0.8     0.0
0FNRS   00    V    100       1       0       0     3.5    -6.7    -0.4
03953   00    V    100      29       0       0     1.9    -0.9     0.6
03953   12    V    100      29       0       0     2.6    -0.9    -0.2

04018   00    V    100      30       0       0     2.8     0.0    -1.8
04018   12    V    100      27       0       0     2.8    -0.5    -1.7
04220   00    V    100      30       0       0     3.4     0.2     0.1
04220   12    V    100      30       0       0     2.4    -0.7     0.0
04270   00    V    100      27       0       3     1.6     1.7     0.0

04270   12    V    100      29       0       3     4.7     0.2     0.5
04339   00    V    100      30       0       0     2.1     0.8    -1.7
04339   12    V    100      30       0       0     3.2    -0.6    -2.2
04360   00    V    100      29       0       0     2.9    -0.9    -0.2
04360   12    V    100      29       0       0     2.9    -0.7    -0.5

08001   00    V    100      25       0       0     3.2     0.4     1.7
08001   12    V    100      22       0       0     2.7    -0.8     0.5
08508   00    V    100      21       0       0     3.2     2.4     0.2
08508   12    V    100      19       0       0     3.6     0.2     0.3
08594   00    V    100      21       0       0     2.8     0.6    -0.9

08594   12    V    100      19       0       0     2.4    -1.6    -0.2
60020   00    V    100      27       0       0     4.7     2.6     1.0
60020   12    V    100      29       0       0     4.0     0.0     0.6
71600   00    V    100      28       0       0     4.0    -1.8    -0.6
71600   12    V    100      29       0       3     3.3    -2.3    -0.2

72201   00    V    100      25       0       0     5.1     2.2     0.4
72201   12    V    100      28       0       0     3.1     0.4     0.0
72402   00    V    100      25       0       0     5.5    -1.4    -0.3
72402   12    V    100      28       0       0     3.6    -1.5    -0.2
72606   00    V    100      14       1       6     3.4     3.8    -1.9
```

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
72606	12	V	100	15	0	0	3.5	0.9	0.4
74494	00	V	100	21	0	0	2.6	-1.9	-0.1
74494	12	V	100	24	0	0	2.5	-1.0	0.1

TABLE 13

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:September, 94

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:500 hPa.
Element monitored		:VECTOR WIND in m s^{-1}
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:UBIAS,VBIAS	:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
GROSS ERROR LIMITS	:Defined in Appendix I.2	

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
BDDH	00	V	500	1	0	0	0.0	-1.6	4.0
DBBH	00	V	500	10	0	0	0.0	0.3	-0.6
DBBH	12	V	500	7	0	0	3.6	-0.6	-0.8
DBLK	00	V	500	1	0	0	3.6	4.2	0.9
DBLK	12	V	500	17	0	0	3.6	-0.7	-1.2
EHOA	00	V	500	1	0	0	3.0	-5.3	-10.1
EHOA	12	V	500	1	0	0	3.0	-2.5	-2.5
F/OU	00	V	500	1	0	0	3.0	3.4	3.6
FNOR	00	V	500	10	0	0	3.0	0.0	-0.8
FNOR	12	V	500	9	0	0	3.2	-0.2	1.3
FNOU	00	V	500	5	0	0	3.1	0.3	0.0
FNOU	12	V	500	4	0	0	3.1	-0.3	-0.8
FNPH	00	V	500	13	0	0	3.1	0.1	1.6
FNPH	12	V	500	11	0	0	3.9	1.3	-0.4
FNRS	00	V	500	16	0	0	2.7	0.4	-0.6
FNRS	12	V	500	16	0	0	4.9	-1.0	0.2
GACA	00	V	500	28	0	0	3.3	0.1	1.3
GACA	12	V	500	27	0	0	3.5	-1.0	-0.8
JBOA	00	V	500	1	0	0	2.7	1.4	-0.9
LDWR	00	V	500	28	0	0	2.8	1.0	1.1
LDWR	12	V	500	28	0	0	3.9	0.1	-0.1
OXYL	00	V	500	20	0	0	2.8	-0.7	-1.3
OXYL	12	V	500	15	0	0	4.6	-0.7	-0.6
OZJP	00	V	500	19	0	0	3.5	0.3	0.3
OZJP	12	V	500	18	0	0	3.4	-0.9	-0.3
SHIPA	00	V	500	1	0	0	2.9	-1.4	-4.3
SHIPAA	00	V	500	1	0	0	2.9	-3.2	1.1
SHIPAA	12	V	500	2	0	0	2.9	-0.4	-1.7
SHIPS	00	V	500	12	0	0	2.9	1.1	0.7
SHIPS	12	V	500	8	0	0	1.8	0.7	1.0
V2LV	00	V	500	27	0	0	1.8	1.5	0.1
V2LV	12	V	500	24	0	0	3.1	0.2	0.1
V2LX	00	V	500	25	0	0	2.8	-0.1	-1.5
V2LX	12	V	500	25	0	0	2.9	-2.5	-0.8
0FNRS	00	V	500	1	0	0	4.2	-0.3	-5.4
03953	00	V	500	30	0	0	3.3	-0.2	-0.6
03953	12	V	500	30	0	0	3.4	-1.5	-1.1
04018	00	V	500	30	0	0	3.6	0.4	0.0
04018	12	V	500	29	0	0	5.2	0.6	-0.2
04220	00	V	500	30	0	0	2.2	-1.1	-0.6
04220	12	V	500	30	0	0	3.2	-1.5	-0.1
04270	00	V	500	30	0	0	4.1	0.6	-0.3
04270	12	V	500	28	0	3	5.0	-1.3	0.6
04339	00	V	500	30	0	0	3.4	0.1	-0.8
04339	12	V	500	30	0	0	4.0	0.3	-0.7
04360	00	V	500	29	0	0	2.5	-0.9	0.6
04360	12	V	500	30	0	0	4.1	-0.3	0.0
08001	00	V	500	26	0	0	3.9	0.1	-1.0
08001	12	V	500	26	0	0	3.3	-0.1	1.1
08508	00	V	500	25	0	0	2.3	1.3	1.5
08508	12	V	500	18	0	0	2.3	-1.4	0.2
08594	00	V	500	23	0	0	2.1	0.5	-1.2
08594	12	V	500	22	0	0	2.3	-0.6	-0.6
60020	00	V	500	27	0	0	3.5	-1.1	-1.5
60020	12	V	500	29	0	0	2.6	-2.3	-1.5
71600	00	V	500	28	0	0	3.5	-0.5	0.9
71600	12	V	500	30	0	0	2.9	0.4	1.2
72201	00	V	500	30	0	0	4.7	0.1	-0.1
72201	12	V	500	29	0	0	2.7	0.3	0.0
72402	00	V	500	29	0	0	3.2	0.6	0.6

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
72402	12	V	500	30	0	0	3.7	0.7	1.0
72606	00	V	500	19	0	0	3.0	-0.2	-1.0
72606	12	V	500	19	0	0	2.5	-0.1	-0.5
74494	00	V	500	26	0	0	2.9	-0.3	-0.4
74494	12	V	500	27	0	0	2.8	0.1	0.6

APPENDIX I

1. The gross error limits for observation minus background differences of geopotential height in Tables 5,10 and 11 are:-

Level (hPa)	Geopotential height (metres)
1000	100
850	100
700	100
500	150
400	175
300	200
250	225
200	250
150	275
100	300
70	375
50	400
30	450

The weighted RMS values used in Table 5,10 and 11 are calculated using the following weights:-

Level (hPa)	Weight
1000	3.70
850	3.40
700	2.90
500	2.20
400	1.90
300	1.60
250	1.50
200	1.37
150	1.19
100	1.00
70	0.87
50	0.80
30	0.64

2. The gross error limits for observation minus background differences of windspeed in Tables 6,12 and 13 are:-

Level (hPa)	Windspeed m s^{-1}
1000	35
850	35
700	40
500	45
400	50
300	60
250	60
200	50
150	50
100	45